REPORT OF THE COMMISSION OF INQUIRY INTO COMPENSATION FOR THE TAKING OF RESOURCE INTERESTS

Richard Schwindt,
Commissioner

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August 21, 1992

The Honorable Lieutenant Governor in Council

May it please Your Honour,

As the Commissioner appointed by Order in Council 468, approved on the 31st day of March, 1992, to inquire into compensation for the taking of resource interests, I respectfully submit my final report.

Sincerely,

Richard Schwindt
Commissioner

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PREFACE

By order of the Lieutenant Governor in Council of British Columbia a Commission of Inquiry into Compensation for the Taking of Resource Interests was appointed on March 31, 1992. The Order instructed the Commission,

> to inquire into the principles and processes for determining whether, in what circumstances and how much, if any, compensation should be paid, to the holders of resource interests that under an enactment have been or are taken, for public purposes and without the consent of the holder, by the Crown or another authority.
>
> In making its recommendations, the commissioner should endeavour to balance the public interest with the interests of the holders of resource interests, and, without limiting this, should have regard for
>
> (a) the manner and cost to the holders of having acquired the resource interests and of having maintained them until the time of the taking, and
>
> (b) other values and other uses for the resources including but not limited to recreational and heritage values and uses.
>
> In the types of cases to which it recommends that compensation should be paid, the commissioner should consider and make recommendations regarding
>
> (a) dispute resolution processes that are fair, timely and cost effective,
>
> (b) methodology and criteria for use in valuing and determining fair compensation, and
>
> (c) the adequacy, in relation to the taking by the Crown or another authority of resource interests, or relevant existing Provincial legislation, considered on its own merits, and on the basis of appropriate comparisons with relevant legislation of other jurisdictions.

The Order in Council limited the Commission's purview to two specific types of resource interests, mineral titles and forest tenures.

Over the period of the inquiry, which was short, the Commission solicited written submissions from interested parties, responded to requests for meetings, interviewed or corresponded with experts in the field of property rights to natural resources, and reviewed a substantial amount of material germane to the issue. The submissions are listed in Appendix A-5. Public hearings were not held given the narrow focus of the inquiry and the limited time available.

Over the short life of this Commission I have enjoyed much co-operation from my staff, public servants, and interested parties. Personnel from the Ministry of Forests, the Ministry of Energy, Mines and Petroleum Resources, the Ministry of Environment, Lands and Parks, and the Ministry of the Attorney General gave freely of their time. Industry participants willingly supplied information upon request. Colleagues at both Simon Fraser University and the University of British Columbia assisted when called upon, but, as is usual in academia, are excused from responsibility for the contents of this report.

The Commission's staff, Ms. Donna Wilson (administrative assistant), Professor Steven Globerman, Mr. Ian McAskill and Ms. Deirdre Riley (research associates) and Professor Jamie Cassels (Commission Counsel) were instrumental in the creation and completion of this report. I am particularly indebted to Professor Cassels who took upon himself the considerable task of surveying relevant jurisprudence in other jurisdictions. His results are contained in Appendix A-1, albeit his contributions are found throughout the report.

PART ONE

INTRODUCTION

> .....I have not tried to develop a comprehensive answer to the takings question. My main message, however, is that such an effort is sorely needed. While the Court should try for a principled resolution, this is one legal area in which almost any consistent, publicly articulated approach is better than none. Clear statement, even if not backed by clear thinking, will do much to preserve the investment-backed expectations the Court talks so much about. Clear thinking would be even better....[1]

This Commission was struck to inquire into the principles and processes for determining compensation in the event that private interests in mineral or timber resources were taken by the Crown for public use. The inquiry was prompted by the increasing frequency of land-use conflicts involving the reallocation of resources from private to public use. The goal is to identify an effective compensation policy which will facilitate such reallocations when they are judged to be in the public interest. Such a policy must be guided by the norms of fairness and efficiency. Properly viewed, compensation policy is not simply a means to determine fair pay for things taken. It is in fact a form of transition policy which should serve to help society adopt desirable economic and social changes. At the same time it can help to avoid conflict by setting appropriate incentives for both public and private sector decision makers.

This inquiry comes at a crucial time. In the past, the vast natural endowments of the province insulated us from many land-use conflicts. There was so much that disputes over public versus private use of these endowments were rare, and usually easily resolved. When private interests were displaced they often could be compensated by payment in kind from elsewhere in the province. This was especially true for timber rights because the seemingly endless forest could always offset any private losses from public takings. Those days are gone, and with them the easy solutions. The task at hand is to construct a compensation policy which helps provide solutions, while respecting extant property rights and legislative realities.

---

1 Susan Rose-Ackerman, "Against Ad Hocery: A Comment on Michelman" *Columbia Law Review*, Vol 88, (1988) p. 1711.

ORGANIZATION OF THE REPORT

The format of this report is as follows. Part Two begins with an overview of the constitutional framework which establishes ownership of, and responsibility for, natural resources. This is followed by a brief description of the forest and mineral resources, the industries that depend upon them, the nature of private rights to their use, and a summary of the relative importance of different forms of resource tenure. The section concludes with a review of legislation bearing upon the regulation and withdrawal of private rights to natural resources.

Part Three reviews the principles underlying sound compensation policies. Emphasis is placed on the influence that payment and non-payment of compensation can exert on private and public sector decisions. Particular attention is paid to the potential introduction of both constructive and adverse incentives.

Part Four identifies the difficulties encountered when trying to define which types of private interests are, and which should be, compensable in the event of a government taking. A survey of the jurisprudence both here and elsewhere provides insights into how the problem has been addressed or avoided judicially. This is followed by a review, drawn from both theory and practice, of different methods for determining levels of compensation.

A detailed description of private interests in forest and mineral resources is provided in Part Five. Each of the interests is characterized in terms of the rights conveyed, with emphasis on exclusivity, comprehensiveness, security, transferability, duration and benefits conferred. An abbreviated historical review of the development of both forest and mineral policy is included. This is necessary to understand the extant system of private interests in natural resources; it is particularly critical to an understanding of the labyrinth of present day forest tenures.

In Part Six, compensation principles, and insights drawn from the experience of other jurisdictions are applied in the British Columbia context. Recommendations are made with respect to compensation for the taking of private rights to public natural resources.

Alternative mechanisms for dispute resolution are explored in Part Seven. Recommendations are made in this regard.

ISSUES NOT ADDRESSED

It may seem curious to end an introduction by specifying those issues which are not addressed. However, given that many submissions implored the Commission to deal with issues tangential to its core mandate, it is necessary to explain why this has not been done.

A large number of submissions asked the Commission to consider the present balance between private and public use of Crown lands and resources, and to advise the government accordingly. Opinion ran from one extreme to the other. Some argued that too many resources had been withdrawn from private use while others took a diametrically opposed position. These submissions clearly reflect the divided state of public opinion over land use in British Columbia. Resolution of land-use conflicts is certainly beyond the mandate and competence of this Commission, as is any evaluation of the proper balance between private and public use of natural resources. At most, this inquiry should help clarify some of the elements which surely should be included in weighing the costs and benefits of resource allocation and reallocation. The broader question of how to use the public's resources, indeed, of how to decide how to use the public's resources, must be dealt with in a broader forum.

Another theme found in many submissions was the need for government to consider and deal with the impacts of resource reallocation beyond the narrow, direct effects on the holders of resource interests. The Commission clearly recognizes that resource reallocation can have deleterious effects on those who do not have any direct right to the resource. Generally, any economic change creates winners and losers, and the withdrawal of natural resources from commercial use is no exception. Some submissions suggested that the Commission resolve these problems by recommending that government generously compensate a broad spectrum of affected parties, including interest holders, employees, sub-contractors, and even suppliers to the industry.

More reasonable parties recognized that compensation for taken property rights is but one, small component of an overall policy to mitigate the negative effects of economic and social change, and, in the process, facilitate that change. They asked the Commission to remind government strongly of the other, perhaps more important components of such a policy. The Commission agrees that such a reminder is in order. Certainly government must consider the effects of resource withdrawals upon other groups such as employees, dependent businesses, and local communities (many of them small and resource based). And it must frame policies to ameliorate harm done. In many cases this means assisting in the redeployment of human resources through retraining, local investment incentives, and in some cases, relocation subsidies. Choosing to ignore those who have no legal claim to compensation is no solution because, if resources

needlessly are idled, particularly human resources, society ultimately will bear the costs in one way or another.

PART TWO

NATURAL RESOURCES: PUBLIC AUTHORITY AND PRIVATE USE

The formulation of a sound compensation policy must have regard for the constitutional setting, the current system of private rights to mineral and timber resources, and the statutory framework which impinges upon the allocation, reallocation and use of Crown resources.

The constitutional framework is important because it underlies provincial ownership of Crown land and provincial authority over natural resources. It sets out the government's public responsibility for natural resource management, and government's power to allocate resources to private persons, to establish the conditions under which the resources can be used and, ultimately, to alter those allocations.

A review of the nature and extent of existing private rights to resource use is necessary for several reasons. Indeed, the nature of the current system has motivated this assessment of compensation policy to deal with the taking of resource interests. If there were few outstanding private rights, and these rights provided only limited access to resources, or if the resources were of little value, creation of an explicit compensation policy might not be warranted. In fact this Commission might not be necessary. By the same token, if there was little demand for reallocation of these resources to public use, there would be little need to review compensation policy. In any of these cases (few rights, little value or few demands for public use) takings would be either very rare or easily settled. In such circumstances an *ad hoc* compensation policy (the current practice) might be the most efficient method of dealing with the issue. Further, if resource interests were homogeneous (i.e., they all had similar rights and obligations) framing a compensation policy would be easier. However, this is not the situation. There is an extensive, complex system of rights to very valuable timber and mineral resources on public lands, and there are demands for the public use of some of these lands. Therefore, an understanding of both the number and characteristics of these rights is necessary. The task is begun in this part with an introduction to mineral and forest using industries, and the systems of property rights to these resources; the task is hopefully completed in Part Five.

The statutory framework is important because it is the instrument by which private interests in public resources are created, regulated, and withdrawn.

THE CONSTITUTIONAL SETTING: PROVINCIAL JURISDICTION

This section provides a general overview of the law relating to provincial ownership of Crown land and authority over natural resources.

Ownership of lands and authority over resources

Following confederation, jurisdiction over most property and natural resources remained vested in the provinces. Section 109 of the *Constitution Act* (1867) provides that all "Lands, Mines, Minerals and Royalties" belonging to the provinces at the time of union continue to belong to the provinces. This arrangement was not applicable in Alberta, Manitoba and Saskatchewan until 1930, but was part of the Terms of Union upon British Columbia's entry into confederation in 1871. The province thus retained ownership and constitutional authority over most resources.[1]

For a period following confederation resource rights were frequently allocated through outright Crown grants of fee simple title to the land. Gradually, however, the bundle of property rights was segmented, and resource rights in Crown land were granted through an increasingly complex system of licences, permits and leases. Now the province typically retains ownership of the Crown land, over which there are a multitude of privately held interests in timber, minerals, water, and other resources. These interests differ significantly in duration, comprehensiveness and strength, and their legal classification is often uncertain.

Not only does the province originally own most natural resources, it also has regulatory authority over land and resources that have been publicly retained or privately acquired. Section 92(5) of the constitution gives the province the power to make laws regarding "the management and sale of the public lands belonging to the province and of the timber and wood thereon." Provincial powers over natural resources were further confirmed by a 1982 amendment (section 92A) confirming the provinces' authority to make laws in relation to exploration, development, conservation and management of non-renewable natural resources and forestry resources, including laws in relation to the rate of production from those resources. Section 92(13) gives the province further power over "property and civil rights in the province." This broad clause also confers on the provincial government the power to regulate the use of privately owned land and other forms of property. Property rights are not entrenched in the constitution. In strict legal terms, therefore, the power of the province to regulate resource use, or even take back resource interests, is very broad.

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1 See Gerard LaForest, *Natural Resources and Public Property under the Canadian Constitution* (Toronto: University of Toronto Press, 1968).

Dual capacity of the Crown

Because of the structure of ownership and jurisdiction, the Crown acts in a dual capacity.[2] On the one hand, it is the original owner of resources, capable of transferring them temporarily or permanently to individuals and companies for the purpose of development and exploitation. On the other hand, the Crown is the legislator, obliged to regulate development in the public interest, preserve the environment, and ultimately to alter the allocation of resources in response to changing conditions and public needs. Thus, in its capacity as regulator and legislator, the Crown can restrict the activities of those who have previously secured resources from it in its contractual capacity.

In its dual capacity the Crown seeks to balance industry's need for security of tenure with government's need to promote other aspects of the public interest; hence, it must maintain flexibility with respect to resource management. Security of tenure is provided through the terms of the contracts, the legislation, and the interpretation of both by courts. Flexibility is maintained in a variety of ways. The terms of the grants reserve to the Crown elements of control, while relevant statutory instruments maintain discretionary powers of decision making. Finally, by reason of its legislative sovereignty the Crown may alter, restrict, or eliminate resource interests. When the Crown asserts its freedom to vary or restrict property rights and resource interests, the issue of "takings"[3] or expropriation arises.

PRIVATE INTERESTS IN PUBLIC RESOURCES: MINERALS AND TIMBER

There is no question that mineral and forest resources are valuable and that the mining and forest industries are of major importance to the British Columbia economy. The forest industries are by far the most important.

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2 This analysis is developed in Andrew Thompson, "Sovereignty and Natural Resources - A Study of Canadian Petroleum Legislation," *Valparaiso Law Review*, Vol. 1 (1967).

3 The term "taking" comes from the fifth amendment to the United States' Constitution which provides: "nor shall private property be taken for public use, without just compensation." In England, governmental takings are typically referred to as "compulsory purchase." In the United States, the power of the state to take property is referred to as "eminent domain." This term refers to the ultimate dominion exercised by the state over property. American terminology also refers to "takings" and "condemnation" which mean to set aside property for public use. In Canada we refer to expropriation. The definition of the term expropriate is: "the taking of land by an expropriating authority under an enactment without the consent of the owner..."

Forest sector

The province encompasses 93 million hectares of land and of this, nearly 95 percent is forested. About a half of provincial forest land is defined as productive, and half of this is considered economically exploitable at present. In other words, roughly 23 of the 93 million hectares of forest are available and suitable for harvest.[4] Based upon the policy of perpetual or sustained yield, the productive forest is now fully committed, some would say over committed. In 1990 logging, lumber, plywood, market pulp, newsprint, and ancillary industries directly employed approximately 81,000 people, or 5.7 percent of the provincial work-force. These industries paid $4.4 billion in employee compensation and benefits, and $1.2 billion in direct payments to governments (federal, provincial and municipal).[5] In 1991 the value of shipments for the sector was $10.2 billion, about 60 percent from wood products industries (e.g., lumber) and 40 percent from paper and allied industries.[6]

Forest based economic activity is not evenly spread across the province. Outside of the metropolitan areas, regional economies are often heavily dependent on this sector. A recent study found that in 21 community areas (encompassing 156 local communities) forestry was the dominant sector. Another 13 community areas (with 102 local communities) had a shared dependency between forestry and one other sector.[7]

Mining sector

Mining is of considerably less significance both in terms of land use and contribution to the provincial economy. It is estimated that about 5 percent of the province's sub-surface land has high potential for mineral and coal production, and another 20 percent has moderate potential.[8] Under current statutes about 82 percent of the provincial land area is open to mineral exploration.[9] Currently about 7.2 million

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4 British Columbia, Ministry of Crown Lands, *British Columbia Land Statistics*, March, 1989.

5 Price Waterhouse, "The Forest Industry in British Columbia - 1990," (1991).

6 Statistics Canada, as cited in: Council of Forest Industries of British Columbia, "British Columbia Forest Industry Statistical Tables," April 1992.

7 British Columbia Ministry of Finance and Corporate Relations, Planning and Statistics Division, "British Columbia Community Employment Dependencies," Background Paper prepared for the Forest Resources Commission, February, 1992.

8 British Columbia, Ministry of Crown Lands, *British Columbia Land Statistics*, March, 1989.

9 The Ministry of Energy, Mines and Petroleum Resources categorizes the accessibility of lands as follows (percent refers to portion of total British Columbia land area):
(a) Accessible (69.1%): lands which may be staked by free miners, includes both Crown and privately owned land;

hectares (or 7 percent of the provincial land area) is held under some form of mineral title.

In 1990 the industries (including coal but excluding petroleum) which comprise the mining sector directly employed 14,000 people, or 1 percent of the provincial labour force. They paid $821 million in employee compensation and benefits, and $175 million in direct taxes to all levels of government.[10] As with forestry, specific regional economies are highly dependent on mining. In three community areas (with 22 local communities) mining is the dominant sector and in three others (with 14 local communities) mining shares importance with forestry.[11] It should be noted that these data refer to the mining sector include coal mining. However the Commission's purview is limited to resource interests in respect of minerals as defined in the *Mineral Tenure Act*[12]. This excludes coal which accounts for nearly one-half of all activity in the mining sector.

In late 1991 there were 20 major metal and asbestos mines operating in the province, with a total employment of approximately 5.5 thousand people.[13] These employment data refer to mine employees and exclude head office and exploration staff. The number of people employed in the exploration for minerals is not known. In 1991, the Ministry of Energy, Mines and Petroleum Resources issued 6,512 Free Miner Certificates, a requirement for exploration, to individuals and companies. How many of these certificate holders are actually engaged in exploration, either full or part time, is not known.

In short, it is clear that the natural resources in question, particularly the forest resources, are valuable. Timber and mineral extraction and processing provide

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(b) Potentially Restricted (12.7%): lands which are being considered for alienation or for severe restrictions such as recreation areas (candidate parks) and conservation proposals (parks and wilderness areas);

(c) Land severely Restricted (12.2%): lands virtually inaccessible or restricted subject to special approvals or agreements (e.g., agricultural, Indian, mineral and placer reserves, class 1 watersheds, and populated areas)

(d) Inaccessible (6%): lands where claim staking and exploration are strictly prohibited (e.g., provincial and federal parks, ecological reserves).

10 Price Waterhouse, "Mining in British Columbia - 1990," (1991). While the 1991 data were available from Price Waterhouse, survey coverage was greater for 1990.

11 *Supra*, note 7.

12 *Mineral Tenure* Act, S.B.C. 1988, c.5.

13 British Columbia Ministry of Energy, Mines and Petroleum Resources, *Mineral Market Update*, Vol. 4, No. 2, May, 1992.

employment, tax revenues, export earnings and, in many smaller communities, the major source of economic activity.

Extant resource interests

The provincial endowments of mineral and timber resources have two common and noteworthy features; they are bountiful and they are mostly owned by the commonweal. However, while the Crown has opted to maintain title to these resources, it has relied on private enterprise to employ them. The result is a complex set of private entitlements which range from freehold title to permits for temporary, limited use.

The system of entitlements to harvest timber is by far the more complicated of the two. Early Crown grants convey the land and all the timber on it. Timber Licences convey all the timber on a specified land area, but once the timber is cut the land reverts to the Crown. Tree Farm Licences convey long-term rights to cut timber on a specified area, but the cut must be consistent with a policy of perpetual yield. Forest Licences give long-term rights to cut a certain volume of wood within a broadly defined area. They are not tied to specific lands. Timber Sales Licences convey similar rights but over a shorter period of time. It is difficult to rank entitlements, or tenures as they are called, in terms of importance because there is no common numeraire. Lands that are regulated under the perpetual or sustained yield policy are subject to annual allowable cut (AAC) constraints, so total AAC might serve as a base. However unregulated forests still play an important role in the harvest, so from time to time tenures on these lands will account for a substantial portion of the cut. These intricacies will be dealt with in Part Five; here the actual cut in the 1990-91 Ministry of Forests reporting period is used as the base.

Referring to Figure 2-1, there were nearly 1,800 tenures, not counting Crown grants and other minor tenures, outstanding at the time.[14] Slightly more than half of the cut was attributable to Forest Licences. About 21 percent came from the 33 Tree Farm Licences[15], and 11 percent from over 1,500 Timber Sale Licences. Crown grants accounted for 10 percent of the harvest, and a variety of minor tenures provided the remainder.

An inventory of mineral titles is easier. There two types of claims, placer and mineral, and two types of leases, mining and placer. Claims are generally used to gain exclusive exploration rights (i.e., to stop claim jumping), and do not allow large scale commercial exploitation of a deposit. The long-term leases provide the security required,

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14 Actually there were well over 2,000 tenures, of one type or another, outstanding. The overall total fluctuates with time as the Forest Service allocates minor harvesting rights.

15 The harvest from Crown grants within Tree Farm Licences is excluded for ease of presentation. Table 5-2 sets out a detailed listing of harvest by tenure type.

Figure 2 - 1

Percent of 1990-91 Harvest by Tenure Type

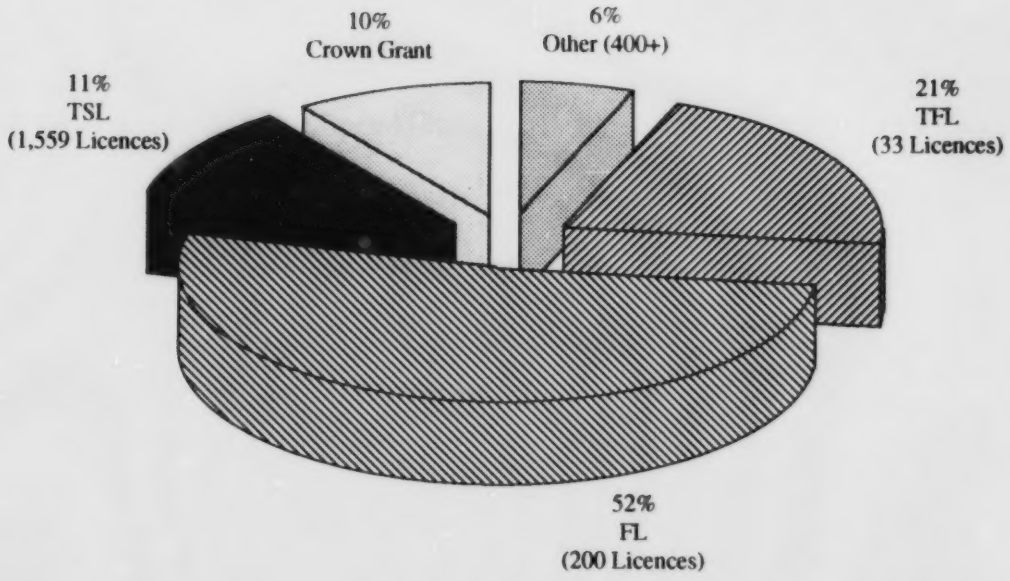
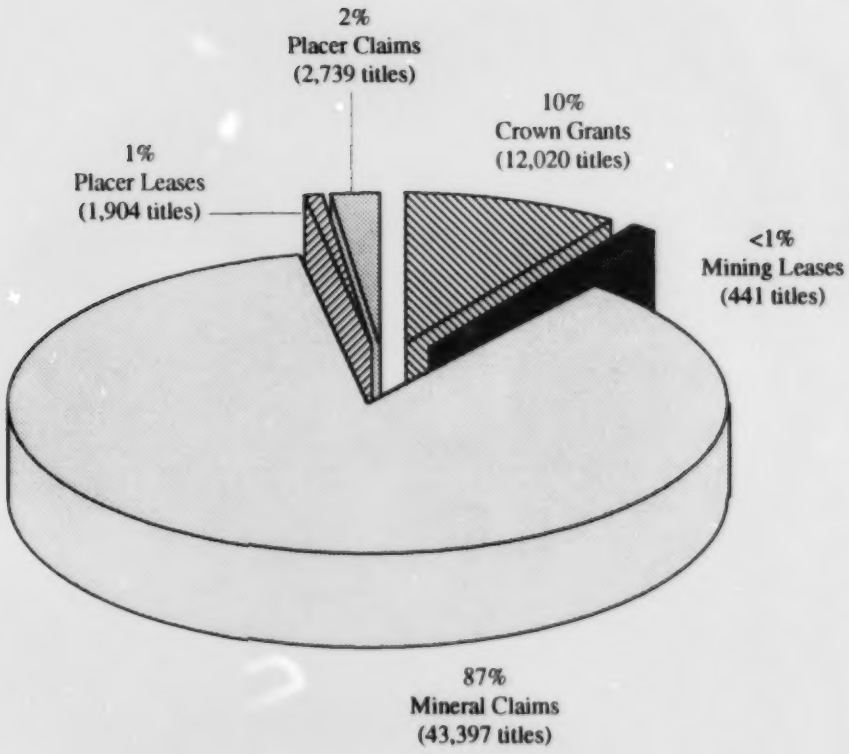


Figure 2 - 2

Percent of Area Under Mineral Title,
By Title
(as of April 1992)



and allow, for large scale mining. There are also a significant number of Crown granted mineral claims outstanding, although their issuance ceased in the 1950s.

The conventional numeraire to measure the importance of these titles is land area. In 1992 there were 43,397 Mineral Claims in good standing, covering 87% of the land covered by mineral titles. The Crown granted claims, numbering over 12,000, covered 10 percent, and the other three types of title (while numerous) accounted for the small remainder. The relative importance of these titles is shown in Figure 2-2.

This overview of private rights to mineral and timber resources leads to several observations. Tens of thousands of entitlements cover a large area of the province. These tenures are heterogeneous in terms of relative importance and convey rights to very valuable natural resources.

PRIVATE INTERESTS IN PUBLIC RESOURCES: REGULATION AND WITHDRAWAL

There are a multitude of ways in which development on private and public lands may be regulated, and there are numerous avenues for withdrawing lands entirely from development and commercial use. The statutory framework governing the particular resource is, of course, the primary regulatory regime. However, other land use statutes will often have an impact on resource holders as well. The Commission has not inventoried every way in which land or natural resource interests are regulated, nor every way in which their development may be restricted, but the following sections provide an overview.

General land use and environmental regulation

The development of public and private lands, and the natural resources on them, is extensively regulated. In addition to many statutes conferring outright powers of expropriation, a broad regulatory framework governs the exercise of property rights. The *Municipal Act*[16], for example, provides an exhaustive framework for planning development. In addition, lands may be placed in an agricultural land reserve, in which case their use is restricted to agricultural purposes.[17] Similarly, areas may be designated

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16 R.S.B.C. 1979, c. 290

17 *Agricultural Land Commission Act* R.S.B.C. 1979, c. 9 - provides for the preservation of agricultural land.

as wildlife sanctuaries,[18] ecological reserves[19] or heritage sites.[20] Under the *Environment and Land Use Act*[21] provincial Cabinet may make orders that preserve lands and restrict development in certain areas. Examples include the Fraser River Estuary Regulation and the creation of the Purcell Wilderness Conservancy.[22] And under the *Environment Management Act*[23], the Minister or Cabinet may declare that a proposed resource use has a detrimental environmental impact and restrict, or even prohibit, the use of the resource. In each case, the ability of holders of resource interests to fully exploit those resources will be limited if not eliminated.

General land-use and environmental regulation is not considered to be a taking and, even though the value of property may be diminished, there is no right to compensation. However, in the case of public lands, there may come a point where commercial activities are so incompatible with the land-use regulation that they are effectively eliminated. It is at this point that the takings issue arises. Specific examples are discussed in Part Four, while a partial account of the legislative framework for withdrawals is provided below.

Parks

In British Columbia, resource development in parks and recreation areas is restricted by the *Park Act*[24]. This legislation contains provisions ranging from the regulation of activities to the expropriation of land for parks. Where new parks are to be created, or boundaries expanded, the Minister is empowered to expropriate private land and also to take back resource interests on Crown land. The Minister may "purchase or otherwise acquire... land, improvements on land, timber, timber rights and other rights" (section 11). The same section (subsection 2) provides that the Crown may also expropriate land and "the rights of a recorded mineral holder of a mineral title in or on a recreation area." The section does not expressly provide for compensation.

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18 *Wildlife Act* S.B.C. 1982, c. 57 - provides for the creation of wildlife reserves.

19 *Ecological Reserve Act* R.S.B.C. 1979 c. 101 - provides for the creation of ecological reserves.

20 *Heritage Conservation Act* R.S.B.C. 1979, c. 165 - preservation of historical or heritage sites.

21 *Environment and Land Use Act* R.S.B.C. 1979, c. 110.

22 See John Ince, *Land Use Law* (Vancouver: Butterworths, 1984), p. 25.

23 *Environment Management Act* S.B.C. 1981, c. 14, s. 4.

24 R.S.B.C. 1979, c. 309.

Short of outright expropriation, the *Park Act* imposes significant restrictions on commercial activities in relation to resource interests. Resource development in parks may not be carried out without a park use permit. Permits are issued only where it is "necessary to the preservation or maintenance of the recreational values of the park involved."[25] A detailed provision in the *Mineral Tenure Act*[26] (discussed later) regulates the way in which new mineral interests may be acquired in parks.

The requirement for a park use permit expressly applies to the holders of resource interests in parks. In particular, without a park use permit, no one may exercise a right under the *Mineral Tenure Act*, the *Coal Act*[27] or the *Petroleum and Natural Gas Act*[28], or carry on any commercial or industrial activity in a park or recreation area.[29] Nothing is said about compensation to the holder of a resource interest who is unable to obtain a permit, but refusals to grant permits have been challenged in the courts as forms of expropriation, or "constructive expropriation." Some of these cases are described in Part Four.

Forests

Timber rights are regulated by the *Forest Act*.[30] Except as expressly provided in the Act, the *Expropriation Act*[31] does not apply to any takings, deletions, or reductions of any interest under the *Forest Act*. Section 63 of the Act expressly precludes compensation for a variety of reductions, deletions and non-renewals. Section 50 stipulates that when a Tree Farm Licence or Forest Licence is transferred, the annual allowable cut is to be reduced by 5 percent without compensation.

Several sections of the *Forest Act* do, however, address the issue of compensation. The most important is section 53 which deals with the withdrawal of

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25 "No interest in a (*a*) park of Class A or Class C shall be granted, sold, leased, pre-empted or otherwise obtained or made the subject of a licence except as authorized by a valid and subsisting park use permit, which shall not be issued, unless in the opinion of the minister, issuance is necessary for the preservation or maintenance of the recreational values of the park involved..." Section 8(1), *Park Act*.

26 *Mineral Tenure* Act, S.B.C. 1988, c.5.

27 R.S.B.C. 1979, c. 51.

28 R.S.B.C. 1979, c. 323.

29 Section 18(c), *Park Act*.

30 *Forest Act*, R.S.B.C. 1979, c. 140, as am.

31 S.B.C. 1987, c. 23.

Crown land from timber production. Stated in general terms, this section provides for compensation to holders of Tree Farm, Woodlot, Forest and Timber Licences when a withdrawal results in more than a 5 percent reduction of their annual allowable cuts.

The Act does not specify what "compensation" means. Where compensation is required, the amount is determined through negotiations. In the event that the parties are unable to agree, the question is referred to one or three arbitrators under the *Commercial Arbitration Act.*[32]

Minerals

The *Mineral Tenure Act* provides a number of ways in which the rights of a claim or lease holder may be restricted. Perhaps most broadly, section 15 provides that "the minister may, by order, restrict the use of surface rights comprised in a claim where he considers that the surface area should be used for purposes other than mining." This section provides that no compensation is payable as a result of such an order, but that there is an appeal to Cabinet which may uphold the order, quash it, or order compensation "that it considers just." This section has been used to prevent mining on Crown lands that are to be dedicated to other purposes.

Like the *Park Act*, the *Mineral Tenure Act* (section 17) prohibits exploration and development activities in a park without consent (in this case the consent of Cabinet on recommendation of the authority responsible for the park).

The *Mineral Tenure Act* also confers powers on Cabinet to regulate mining activities on lands that are *recreation areas* under the *Park Act* (section 19). The powers under this section apply only to mineral titles located after the area was established as a recreation area. Cabinet may authorize exploration on these lands, may regulate exploration and development, and set terms on which claims and leases are acquired and held. Claims and leases located in the recreation area after its designation may not be expropriated until 10 years after the Minister has evaluated the mineral potential of the area and the miners concerned have been notified that the area is to become a park. The regulations may provide for expropriation after this time and may set the terms of compensation. The section also provides that where mineral rights are expropriated under this section, or under the *Park Act*, no compensation is payable for expenses that relate to exploration, development, or the acquisition of the title.

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32 S.B.C. 1986, c. 3.

PART THREE

PRINCIPLES

This Commission is charged with reviewing the principles underlying government compensation for the taking of private interests for public use. The analysis begins with fundamental issues such as the definition of property rights, and the rationale for protection of such rights. This is followed by a discussion of reasons for, and consequences of, different compensation policies. The analysis ends with an assessment of the different bases that can be used to determine compensation once compensability has been established.

PRIVATE PROPERTY RIGHTS: WHAT AND WHY?

The definition of what constitutes property is complex.

> From a legal viewpoint, property is a bundle of rights. These rights describe what a person may and may not do with the resources he owns: the extent to which he may possess, use, transform, bequeath, transfer, or exclude others from his property. These rights are not immutable; they may, for example, change from one generation to another.[1]

Property is a bundle of legally defined, mutable rights. The owner is free to exercise those rights and is free from the interference by others in their exercise. These rights range from strong to weak, and even the strongest are subject to restrictions.[2] When rights are modified there is commonly an effect on the value of the property.

Property is generally viewed by philosophers as an instrument to achieve fundamental values such as utility, justice, self-expression and social evolution.[3] Because this report unabashedly places great emphasis on property as an instrument to achieve utility, it is worth clarifying this notion, as well as some terminology which will be used throughout this report.

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1 Robert Cooter and Thomas Ulen, *Law and Economics* (Glenview, Ill.: Scott, Foresman & Co., 1988) p. 91.

2 Few property rights are stronger than the ownership of our own bodies. Nevertheless we are forbidden by law from selling a kidney.

3 Cooter and Ulen (1988) p. 119.

Utilitarians view property as an instrument to assist in the maximization of social welfare. Resources, which include natural and human resources, are scarce relative to society's desires. Therefore, to maximize welfare (happiness, satisfaction) requires the best use of scarce resources. Efficiency in allocation is one element of welfare maximization. It simply means using scarce resources where they are most valued. Technical efficiency (or efficiency in production) is another element. Once the decision of what to produce is made, production should be carried out using as few scarce resources as possible. For utilitarians, welfare maximization is a standard against which social institutions (such as property) and public policies (such as compensation policy) can be measured.

Emphasis is placed on utility because the private interests under review (mining and timber rights) were allocated primarily to achieve utilitarian goals. Historically, the goal was economic development.

> Through its influence on development of the province's largest single industry, forest policy has been a major instrument in shaping the form and pace of British Columbia's economic growth. Undoubtedly the most critical aspect of this policy has been the means devised for conveying rights over Crown forest land and timber to industrial users.[4]

Utilitarian goals carry through to this day, and in the case of the forest sector, are enshrined in the *Forest Act*. The evaluation of applications for Tree Farm Licences and Forest Licences (the most important types of harvesting rights) explicitly includes consideration of the potential for:

a) creating or maintaining employment opportunities and other social benefits in the Province;

b) providing for the management and utilization of Crown timber;

c) furthering the development objectives of the Crown;

d) meeting the objectives of the Crown in respect of environmental quality and the management of water, fisheries and wildlife resources; and

e) contribution to Crown revenues.[5]

This is not to say that other values are not facilitated by the allocation of resource rights. Certainly the establishment of free miner's rights helped individuals achieve

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4 Peter Pearse, *Timber Rights and Forest Policy in British Columbia, Report of the Royal Commission on Forest Resources* (Victoria: Queen's Printer, 1976) p. 22.

5 *Forest Act*, Section 11 (4) and Section 27 (5).

desirable goals such as independence, self-expression and a sense of freedom. Nonetheless, the over arching goal was and is economic development, and more recently, employment stability.

The economic rationale for the collective protection of property rights is straight-forward. In the absence of collective protection, an individual who possessed property would have to divide his time between husbanding, cultivating, working and improving that property and protecting the property from the encroachment of others; one hand on the plowshare, one hand on the sword. It is more efficient (i.e., less costly) to assign this task to the state, create laws which protect property rights, and use the police power of the state to enforce those laws.

The economic rationale for reallocating private property to public use is also straight-forward. The very act of assigning responsibilities to the state, such as the protection of private property, requires that the state be endowed with the power and financial wherewithal to discharge that responsibility. In circumstances where the public use of a particular property generates greater welfare than the private use of that property, efficiency requires that the property be transferred to the state. To achieve this greater welfare, the state generally has the power to compel the private party to transfer the property. The fact that the transaction is compelled, rather than voluntary, gives rise to complicated questions of compensation.

Not all interferences with property can possibly be compensable. Property is a bundle of rights and those rights are continually being modified by government. In some instances modification of the right enhances the value of the property. For example, re-zoning a property from agricultural to residential use generates windfall gains for the owner which are rarely captured by government. On the other hand, there are literally thousands of instances where government restricts rights and thereby lowers the value of property to its owner. These can range from trivial restrictions, like prohibiting residential refuse burning on a smoggy day to outright taking of land for a highway. Both involve a reduction of the property owner's rights. The distinction is only one of degree. It is obvious that were government bound to compensate for each and every reduction in property rights, it would be paralyzed. As a result, the definition (whether defined by statute, judicial interpretation, or custom) of a compensable taking is influenced strongly by pragmatism. There are no hard and fast rules, but some generalizations are possible. The stronger the property right, and the greater the owner's loss, the more likely the taking will be viewed as compensable.

The determination of what is compensable directly impinges on the choice of a base for calculating compensation. Consider the case of a government taking of a private monopoly. The taking is motivated by government's desire to curb the exploitive pricing of the monopolist. Rather than regulate, government opts to run the monopoly as a

Crown corporation. In negotiations over compensation, the monopolist demands forgone monopoly profits. Government refuses, arguing that the monopolist was not entitled to these profits and that to pay them would frustrate the object of the taking. Thus the finding on what is compensable directly affects the calculation of the amount of compensation. In this case, monopoly profits are excluded from the count.

WHY COMPENSATE?

This section deals with the rationale for compensation. Emphasis is placed on the role of compensation policy as an instrument to achieve social welfare. This emphasis is intentional. Overwhelmingly, private rights to Crown resources have been allocated in the interest of encouraging economic development, an important element in achieving social welfare. Now, as the province seeks to reallocate some of those resources, it is important that compensation policy give appropriate signals to decision makers, particularly economic decision makers. If this is achieved, both private and public resource allocation will be improved to the benefit of society as a whole. And, in the process, land use conflict can be reduced. It should be noted that compensation serves goals other than efficiency. Fairness is certainly one. However, as will be shown, fairness and efficiency are inextricably entwined.

GAINS FROM REALLOCATION: CREATION AND DISTRIBUTION

At the outset it is necessary to understand, in a formal sense, why reallocation of resources from one use to another can improve social welfare. This is important because through exchange additional welfare is created. The distribution of that additional welfare (or surplus) directly impinges on the compensation issue. The discussion begins with simple private transactions (i.e., reallocation from one person to another) and then moves to transactions between private interests and the state.

In market economies the voluntary nature of most private transactions ensures that welfare increases as a result of the exchange. Put simply, the buyer would not buy if the price were more than the value of the property to him, and the seller would not sell if the price were less than the value of the property to her. Voluntary exchange enhances welfare because the property moves from where it is valued less to where it is valued more. Both parties are at least as well off, and generally better off, than if the exchange had not taken place. Otherwise, they would not have entered into the exchange. Further, it is important to note that in private transactions the distribution of the gains is indeterminate. This is best shown by example.

If a potential buyer values an object at $100 and the owner values it at $50, a transaction can occur at any price between $100 and $50. If the seller is an astute negotiator, the sale price could be driven up to exactly $100, in which case the seller would extract all surplus from the transaction. Conversely, at a sale price of $50 the buyer would extract the surplus. From the perspective of efficiency it does not matter who receives the surplus because its distribution does not affect its size.[6] The surplus will always be the difference between its higher valued and lower valued use (i.e., $50). However, the distribution obviously matters very much to the transactors.

The same logic applies when exchange is compelled by the state, rather than entered into voluntarily. When the state takes private property which has a higher value in public than in private use, total welfare increases. Drawing from the earlier example, if public use of the property is valued at $100 and private use at $50, total welfare will be increased by reallocating the property to public use. Compensation is irrelevant with respect to the creation of the surplus. The state can extract all the surplus by paying the private holder $50, or can yield all the surplus by paying $100. Indeed, the state could pay nothing, thereby redistributing wealth from the private party to the state, with no impact on the total surplus.[7]

The principle to be drawn from this is that when benefits from the public use of property exceed those from private use, the taking will increase societal welfare. The level of compensation does not affect this conclusion.

This does not mean that uncompensated takings are problem-free. The irrelevance of compensation to total welfare applies only to the single transaction. If the level or lack of compensation affects the behaviour of economic actors (either public or private), in subsequent decision making, there may be a marked effect on social welfare in the future. This is because compensation introduces incentives and disincentives for particular types of action. Too little compensation might encourage government to convert too many resources to public use and discourage investment in otherwise valuable endeavours. Too much compensation could deter government from converting property to a higher valued public use and could encourage investment in activities which had less economic merit than others.

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6 Efficiency in allocation means using resources where they are most valued. The distribution of the surplus does not affect efficiency, but it does affect income distribution which is a social concern.

7 This of course ignores the additional costs imposed on the private party (and others who might fear similar state behaviour) attributable to rancor over the injustice of the taking.

COMPENSATION TO ACHIEVE EFFICIENT OUTCOMES

Recognizing that compensation has impacts on the future behaviour of individuals, businesses and government leads to an important conclusion. Compensation systems should be designed to achieve policy goals. From this perspective, compensation is a policy tool that at a minimum should be consistent with policy objectives, and, ideally, should promote those objectives.

This can be clarified with an example. Suppose the owner of a piece of property values it at $100 for use as a farm and society values it at $150 for use as a road. If the policy objective is to stop government from taking private property, government should be forced to pay more than $150. If the objective is to strip society of any of the gains attributable to the reallocation, government should pay exactly $150. If the objective is to leave the owner indifferent over the reallocation, the government should pay $100. Finally, if the objective is to transfer wealth from the property owner to the commonweal, the price should be zero.

Each of these compensation strategies will affect the behaviour of both government and property owners and consequently will have spin-off effects. For example, if government is forced to pay more than $150 for the property, taxpayers will resist because the cost to them will exceed the benefits they receive. The road will not be built, infrastructure will weaken, economic development will be curbed, and society as a whole will be worse off. In this case one goal, preservation of private property, clashes with another, economic well-being. A wise compensation policy must consider impacts on both immediate and long-term social objectives. The remainder of this section will deal with the potential immediate and long-term effects of compensation. Consideration of these effects is critical to the formulation of a positive policy, one that is not just consistent with other policy goals but that helps achieve them.

Compensation above the reservation price

In order to facilitate the discussion, an economic term will be adopted. The **reservation price**[8] is the amount of compensation which leaves the private property owner indifferent about the taking. For the moment, the quantification of the reservation price will be ignored.

It is of course possible to frame a policy that will result in payment above the reservation price. In the extreme case, payment could be set above the value of the

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8 The reservation price is akin to the reserve price at an auction. The seller informs the auctioneer of the lowest acceptable price and if the bids do not reach this price the item goes unsold. Of course bidders are not informed of the reserve price. If they were the auction would proceed very quickly indeed.

property in public use. In a sense this means imposing punitive damages on government for engaging in takings. Such a policy would involve government forcing itself to pay punitive damages for its own actions and would dissuade policy makers from reallocating resources regardless of their value in public use. Projects that were clearly beneficial would not be undertaken and society would be denied all the gains associated with public goods.

Payment above the reservation price, but not above the public's value of the property, is also plausible. In this case all or part of the gain achieved by reallocating the property would go to the private owner. Such a scheme would clearly introduce inefficiencies. Rational investors would attempt to bring into private use resources which had a higher value in public use. Investors would seek out property that was likely to be taken. Developers might build on land that was more suitable for roads than for residential housing in anticipation of a government taking. Forest companies might seek timber stands with the highest recreational values and mining companies might stake claims in the most environmentally sensitive areas. Simply, such a compensation scheme would send wrong signals to decision makers.

Payment above the reservation price would encourage property owners to compete for the surplus generated by reallocation. Suppose that in the earlier example of the property that was valued for roads at $150 and for farming at $100, 10 farmers each owned a tenth of the property. In order to assemble the property for the road, government would have to negotiate with the farmers, each of whom knew that the government was willing to pay a maximum of $150 for all ten parcels. Under these conditions each farmer would have the incentive to capture as much of the $50 surplus as was possible. This might involve a strategy of holding out, hoping that the other nine farmers would sell for their reservation prices (i.e., $10 per parcel) and then demanding $60. If every farmer adopted this strategy, which is perfectly rational from a private perspective, the assembly of the parcels would be paralyzed and costs of negotiation would burgeon. The fact that there is no clear entitlement to the surplus guarantees that there will be competition for it. Because it is very common for government projects to require assembly of multiple private property rights, this is a very real problem.

Further, payment above the reservation price sets up strong incentives for private property rights holders to influence government decision making. Property owners would have every incentive to encourage the taking of their property. This encouragement could take many forms, ranging from lobbying public officials to sharing the surplus (i.e., bribery). Clearly, these types of incentives should be avoided.

The principle to be drawn from this is that payment above the reservation price is a bad idea. It creates an unclaimed surplus which unleashes competition among property

owners for as large a portion as possible. This type of behaviour is generally held to be wasteful.[9]

Compensation at the reservation price

An alternative policy is to pay each claimant the reservation price. Attention is focussed here on the incentives introduced by such a policy.

For a long time the conventional wisdom was that, to achieve efficient resource allocation, government must pay the reservation price for private property takings.[10] This position was based on two grounds. First, full compensation[11] is required to insure that optimal levels of private investment are achieved. If compensation is inadequate, investors will fear expropriation of the fruits of their endeavours and therefore will reduce their efforts. More technically, investors will view expropriation as a risk to future profits. This risk will lower the expected profitability of investments and less investment will be forthcoming. Ultimately this will result in a misallocation of resources because investment will be redirected toward less productive but more secure ventures.[12] Second, it is said that full compensation is required to curb the power of government. If government pays less than the reservation price, or no compensation at all, this will lead to over allocation of resources to public use.

The effect on private incentives

The proposition that full payment of the reservation price ensures efficient allocation of resources, though compelling, has been seriously challenged.[13] The competing view is that the risk of government expropriation is no different than any

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9 In economics this is called rent seeking. It is viewed as wasteful because it uses up time, money and energy which could be used to create goods and services.

10 See Richard Epstein, *Private Property and the Power of Eminent Domain* (Cambridge: Harvard University Press, 1985) for a forceful presentation of this position.

11 Here "full compensation" is taken to mean payment of each claimant's reservation price.

12 For example, an investor might have the choice between two opportunities, *A* and *B*. *A* is superior to *B* in every regard, and, assuming expropriation were ignored, the investment would be made in *A*. If an expropriation scheme were implemented that provided inadequate compensation in the jurisdiction of *A* but not *B*, the latter might then provide higher expected benefits. In that case, investment will move to *B* even though *B* is inferior in other regards. This is often referred to as "capital flight."

13 See Louis Kaplow, "An Economic Analysis of Legal Transitions, *Harvard Law Review*, Vol. 99 (1986) and Lawrence Blume, Daniel Rubinfeld and Perry Shapiro, "The Taking of Land: When Should Compensation be Paid," *Quarterly Journal of Economics*, Vol. 99 (1984).

other market risk, such as the emergence of a competitor, a change in consumer tastes, or a natural calamity, and should be treated as such. The argument is complex and deserves some elaboration.

The recognition and estimation (whether quantitative or qualitative) of risk plays an important role in directing resources to their most valuable use. For example, the choice between building on a flood plain and building on high ground should be influenced by the probability, or risk, that a flood will occur. If the risk is ignored, too much building will take place on the flood plain and ultimately too many resources will be damaged or destroyed by flooding. This would represent a misallocation of resources. Generally, risk is held to be undesirable. Markets, such as insurance and futures markets, have developed to accommodate those wishing to attenuate their exposure to the negative impacts of specific events. Government compensation for government takings can be viewed as a form of insurance. Full compensation for a taking effectively spreads the risk of the event across all taxpayers. When viewed this way, it follows that distortions associated with insurance schemes are equally applicable to compensation policies. Primary among these distortions is the moral hazard phenomenon.

Moral hazard simply means that when insurance is issued against an event, the event is more likely to happen. An example will clarify this. A traveller carrying cash is likely to pay attention to its safe-keeping because he knows that if it is lost or stolen there will be no recourse. The same person carrying traveller's cheques is likely to be less careful. The insurance industry clearly recognizes the problem of moral hazard and seeks to control it through devices, such as "deductibles," that place a part of the burden of the loss on the insured.[14] In the case of government takings, it is argued that full compensation will lead to excessive private investment in property which is more valuable in public use. Again, an example will help clarify this point. A landowner knows that her property might be taken for the extension of a road. She wants to live on the property and can choose between a mobile home and a permanent structure. If the road is extended, she will be forced to sell and either the mobile home will be moved (at little cost) or the permanent house will be razed (a substantial waste of resources). If full compensation is guaranteed, she will ignore the risk of her property being taken and will be more likely to construct the permanent structure. If compensation is not guaranteed, she will factor the risk of the road extension into her decision making and will be less likely to build the house. The same forces are at work when enterprises situate resource extraction activities. If timber and mining companies are assured of the reservation price, they will make no distinction between an area with a highly valued alternative public use and one without. If the area is ultimately reallocated to public use, investments in immobile assets, such as mine shafts, buildings, sorting grounds and the

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14 In the case of the traveller's cheques example, the inconvenience of having to claim replacement cheques is probably enough to curb outright negligence.

like, will be for naught. This is clearly wasteful. The conclusion of this line of reasoning is that compensation leads to over investment by private property rights holders because they ignore the risk of reallocation of their property to public use.

Proponents of the "government taking as market risk" argument conclude that compensation is unnecessary for (and is likely to impede) the efficient allocation of resources. In their view, property holders should treat the possibility of expropriation as a market risk and act accordingly. If rights holders wish to mitigate the risk, they can self-insure by diversifying their investments (e.g., building on both the flood plain and on high ground), or by purchasing insurance against expropriation.[15]

It is clear that businesses continually live with and factor many forms of government risk into their decision making. Pharmaceutical companies assume the risk of new drugs not meeting safety standards or of existing drugs being subsequently banned. Mining companies bear the risk that potential developments will not meet environmental regulations. Forest companies assume the risk that regulators will impose recycled fibre content rules on newsprint, or that foreign governments will impose countervail duties. Furthermore, there is some judicial support for the view that "government risk" should be borne by the resource holder. In calculating the value of an asset in circumstances where the owner requires government approvals and permits, or where regulation may make the asset less valuable, the risk of non-approval is factored into the valuation.[16]

For example, in *Gordon v. Province of New Brunswick*[17] the court considered the value of mining claims that had been expropriated for the establishment of a deep-water project. Justice Stevenson stated;

> Resource exploration and development involves a high degree of risk. The risks include fluctuations in prices and in demand for the product, *changes in legislation and government regulations relating to prices, royalties, production quotas and environmental protection.* Development of the particular resource would have been contingent

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15 That there is no market for expropriation insurance is explained by the fact that it has not been necessary. Since government provides compensation there is no risk. However, this begs the question of whether private insurance would become available if government ceased compensation. It is also questionable whether individuals could self-insure. It is unlikely that an individual could purchase multiple homes to guard against the possibility that one of them might be expropriated.

16 *C.N.R. v. Harricana Gold Mines Inc.* (1943) 3 D.L.R. 529 (S.C.C.)

17 (1988) 39 L.C.R. 289, aff'd. (1990), 42 L.C.R. 12 (N.B.C.A.)

> upon the obtaining of a favourable agreement with the owners of the surface rights. (emphasis added)[18]

It is also clear that enterprises can and do factor the risk of expropriation into their investment decisions. On an international level financial, institutions and multinational enterprises use country risk analysis which incorporates the risk of expropriation.[19] For example, in selecting countries for minerals exploration, companies consider (in declining order of importance) geologic potential, political stability and mineral policies amongst other criteria (infrastructure, input costs, proximity to markets, currency exchange controls, taxation and the like).[20]

In sum, resource based industries, like all industries, deal with "government risks" constantly. Most of these risks are not insured by government. The question is why should a taking be treated any differently than other market and government risks?

Moreover, some commentators see no compelling reason why government should be in the business of offering this type of insurance. They question whether government can insure this risk more efficiently than enterprises (either through diversification or private insurance markets). This is difficult to answer. If private markets emerged it might be that only the most likely candidates for expropriation would insure. This would cause problems.[21] Small enterprises might be unable to diversify (e.g., a small mining company might not have the wherewithal to operate multiple properties). In short, while private insurance or self-insurance might well justify a non-compensation policy, the lack of solid evidence renders this a possibility but not a certainty.[22]

The "expropriation as market risk" advocates have been criticized on the grounds that they ignore, or misinterpret, the demoralization cost which results from a failure to compensate. The concept was set out formally by Frank Michelman in a seminal work.

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18 *Ibid.*, p. 308

19 See Maurice Levi, *International Finance* (New York: McGraw-Hill, 1990) pp. 401-408.

20 Charles Johnson, "Ranking Countries for Minerals Exploration," *Mining Journal*, Vol. 314, (1990).

21 This is the "adverse selection" problem. Effectively, if only bad risks insure, there is no true risk spreading. This could be corrected by making insurance mandatory.

22 There are examples of government sponsored insurance for expropriation of private property. The Overseas Private Investment Corporation will insure U.S. private investment in underdeveloped countries against currency inconvertibility, expropriation, war and revolution. Over half of non-oil related U.S. investment in underdeveloped countries is covered by this programme. See Maurice Levi, *International Finance* (New York: McGraw-Hill, 1990) pp. 401-408.

> "Demoralization costs" are defined as the total of (1) the dollar value necessary to offset disutilities which accrue to losers and their sympathizers specifically from the realization that no compensation is offered, and (2) the present capitalized dollar value of lost future production (reflecting either impaired incentives or social unrest) caused by demoralization of uncompensated losers, their sympathizers, and other observers disturbed by the thought that they themselves may be subjected to similar treatment on some other occasion.[23]

The demoralization concept suggests that the costs of non-compensation are carried into the future. The cost is reflected first in the disutility (unhappiness) experienced by the uncompensated property holder and sympathizers. This cost is in addition to the value of the expropriated property.[24] Further, the demoralization costs carry into the future as the loser and others who fear uncompensated expropriation alter their behaviour. The distorted incentive might be reflected in a reluctance to invest.

Michelman went on to point out factors which lead people to fear being strategically exploited through the takings process (i.e., factors which create or exacerbate demoralization costs).[25]

First, apprehension will result if it is widely believed that the reservation price could be easily determined but the taking was left uncompensated. If it is clear that the claimant has suffered a unique loss which is not borne by many others, and if it is easy to measure that loss, then the claimant should be paid. Not to do so will engender anxiety among others who fear the same treatment. The costs of measuring the loss and reaching agreement (known as settlement costs) are important to this analysis. Settlement costs do not include the actual payment to the property owner. Rather, they are the negotiation, appraisal, litigation and similar costs incurred to determine what price must be paid to avoid demoralization. More simply, they are the costs of determining the true price that will leave the claimant indifferent over the taking.

If settlement costs are small, as might be the case in the appraisal of an urban lot needed for a road extension, Michelman would argue that they should be incurred and

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23 Frank Michelman, "Property, Utility and Fairness: Comments on the Ethical Foundations of 'Just Compensation' Law," *Harvard Law Review* Vol. 80 (1967) p. 1215.

24 The notion that the demoralization cost is in addition to the value of expropriated property reflects the fact that the way in which a person loses the use of a valuable object matters. For example, most people (and their family and friends) feel worse when a possession is stolen than when they lose or accidentally break it.

25 Michelman (1967) p. 1216-1218

the appraised value paid. However, when settlement costs are high relative to the reservation price, the conclusion is less clear. Settlement costs might be high, for example, when the physical characteristics of the asset are unknown, when the value of the asset is dependent on events in the distant future, when the owner guilefully exaggerates the value of the property, or any combination of these. At the extreme, settlement costs might exceed the reservation price. The problem is similar to damage awards for "pain and suffering." Canadian courts recognize that pain and suffering are real but not measurable. Rather than engage in interminable deliberations to quantify such damages, they have relied on very general principles and have imposed an arbitrary ceiling on awards.

Second, the more doubtful the superiority of public use over private use, the more likely the property owner will be demoralized by anything less than the reservation price. If it is believed that government has exaggerated the social benefits of the project, owners will more likely view the taking as a disguised redistribution of wealth from one group to another, rather than a reallocation to achieve greater benefits for all.

Third, the more any group feels it is being targeted for under compensated expropriations, the greater will be the sense of demoralization. Conversely, if the owner perceives the taking as indiscriminate (i.e., no one was singled out), and feels that similar burdens have been widely placed on other members of the community, demoralization will be less.

These latter two sources of demoralization reflect, in part, fairness concerns. If the reallocation is seen as socially beneficial, and if others in like situations are treated similarly (and are expected to be treated similarly in the future) demoralization will be less, regardless of the level of compensation.

Conclusions emerging from this review of the interrelationship between compensation and private incentives are as follows.

First, there is no consensus upon the need, from an efficiency perspective, for any compensation. Some argue for payment of the reservation price, others argue for no compensation. The argument hangs, in part, upon whether a government taking is viewed as simply one market risk among many or as something else. While there is no consensus on the absolute need for compensation, there is little doubt that compensation should be structured to avoid the more common problems of insurance such as moral hazard.

The demoralization costs concept also provides insights. A careful consideration of the causes of demoralization suggests that when government takings are not predicated upon straight-forward social welfare maximization, these costs will be higher. More

bluntly, when it is perceived that a government taking is really a redistribution from one group to another, rather than a reallocation to achieve greater social benefits, demoralization sets in. The situation is exacerbated when the losers feel they will not share in future reallocations and do not share in the current reallocation.

Having identified the potential effects of compensation (or the lack thereof) on private sector decision makers, a similar analysis must be made with respect to government. At issue is whether the necessity to pay the reservation price for takings affects government's judgement of when social benefit is enhanced by the taking? If there is such an effect, this introduces an element of causality into the taking process. For example, if non-compensation encouraged government to take private property, then takings could not be viewed simply as a random market risk. Takings would be directed at those who were not to be compensated.

The effect on government incentives

If government were a flawless welfare maximizing machine, the issue of compensation for takings would be much less problematic. Always and everywhere the taking of private property would increase social welfare. The citizenry, confident that government could not err, would be more likely to willingly bear additional taxation if compensation were required. If takings were uncompensated, those who lost property to the commonweal would undoubtedly resent the "unfairness" of the taking, but could take some solace from the fact that the reallocation was socially beneficial, albeit personally painful.

There are a number of forces which potentially can deflect government decision making from the welfare maximizing path. Some of them are directly associated with the extent to which compensation is obligatory.

It was noted earlier that one theme of proponents of full compensation is that it forces policy makers to focus on the costs and benefits of their decisions. According to this argument, without obligatory payment of the reservation price, government would have the incentive to reallocate too many resources from private to public use. Paying less than the reservation price creates the illusion (called a fiscal illusion) that private property is cheap, even free, for the taking.

While appealing in its simplicity, this position has been challenged. It is based on an underlying assumption that for some reason government tends to emphasize costs more than benefits when engaged in a taking. It is true, in a narrow context, that if government does not compensate, the taking does not immediately cost anything in that there is no depletion of the public purse. But by the same token, the taking does not create direct benefits for government. It is society that benefits in the first instance from

roads, parks and flood control, not government. In fact, following through with the fiscal illusion argument suggests that paying compensation will bias government against justifiable reallocation of property to public use. Government would avoid reallocation of property from private to public use because it pays the costs but does not enjoy the benefits.

Upon reflection, the notion of fiscal illusion does not appear particularly relevant to the issue at hand. In submissions to the Commission, and in broadly disseminated publications, forest and mining interests have very ably documented the cost to government, in terms of taxes, stumpage fees, royalties and the like, of rescinding mining and timber harvesting rights. Government also has a very good idea of the costs (to government) of maintaining such projects as public parks. It is hard to see how an "illusion" could survive in the face of this information.

It is worth noting that fiscal illusion is the source of but one of many potential biases in government policy making. Some believe that government policy makers tend to heavily discount the future, regardless of whether the future brings benefits or costs.[26] Thus a reallocation of resources to public use entailing clear up-front costs, but distant benefits, is less likely to be pursued than one with clear, immediate benefits and distant costs, even though net benefits are identical.[27] For the most part, the payment of the reservation price represents an immediate cost because the value of the resource in private use is paid for. If the social benefits are to be reaped in the distant future, policy makers would be biased against the taking. This is particularly relevant to projects such as the creation of ecological reserves where benefits are thought to accrue not just at some future point but in perpetuity.

Another view is that government is likely to respond to the demands of well defined, compact interest groups whose members clearly recognize either the benefits or costs which will fall to them as a result of a particular policy, while ignoring or discounting the benefits or costs accruing to ill defined, diffuse interest groups who do not clearly recognize the impact of the policy upon them.[28] Plausibly, the compensation issue creates well defined, compact interest groups (e.g., those subject to an expropriation) that are capable of clearly and forcefully making their interests known to policy makers.

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26 This might hold if the government's planning horizon extended no further than the next election.

27 See J. D. Gwartney and R. Stroup, *Microeconomics: Private and Public Choice*, 2nd edition (New York: Academic Press, 1980).

28 See James M. Buchanan, Robert Tollison and Gordon Tullock, eds., *Towards a Theory of the Rent-Seeking Society* (College Station, Texas: Texas A & M Univ. Press, 1980).

There is an extensive literature dealing with the sources and effects of biases in government decision making.[29] Without a clear understanding of public policy makers' motivations (which is certainly beyond the scope of this Commission) it is not possible to conclude that full compensation (as reflected in payment of the reservation price) improves resource allocation through a salutary effect on fiscal illusion. It could just as well be that fiscal illusion has a salutary effect on myopic policy making, or is an antidote to rent seeking on the part of compact, politically effective lobbying groups.

The consequences

This review of the potential effects of compensation levels on both private and public sector incentives leads to several broad principles.

First and foremost, when deciding to reallocate resources from private to public use, government must get the welfare calculations right. This may appear trite, but it is critical to the compensation issue. A gross misjudgment leads to an immediate misallocation of resources and an escalation of demoralization costs potentially leading to further misallocations in the future. The importance of "getting it right" is reflected in a number of submissions to this Commission. Some have implored the Commission to consider the deleterious effects on the economy of British Columbia of takings currently under consideration, while others have warned of the dangers of not expanding the reallocation of lands to public use. While it is not within the Commission's mandate to consider the wisdom of land use decisions, nor to comment on the process by which these decisions are made, it is important to recognize that, regardless of the level of compensation for takings, a widespread belief that government has directed resources to their highest value use will make the process more palatable, even to potential losers.

Second, while there is no agreement on the need for compensation to achieve social welfare, there is agreement that compensation should be structured to provide appropriate incentives and disincentives for decision makers. More bluntly, compensation policies should not induce private investment in resources that are likely to have a higher value in public use. To do so would increase the likelihood of land use conflicts. By the same token, compensation should not deter private investment in resources which are likely to have a low value in public use. To do so would increase the likelihood that the resource would go unused.[30]

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29 See David Weimer and Aidan Vining, *Policy Analysis, Concepts and Practice*, 2nd ed. (Englewood Cliffs: Prentice Hall, 1992), Chapter 6.

30 Idle land is not necessarily unused. For example, park land might be idle in the sense that its natural resources are not being extracted, but certainly it is not unused.

Third, there is agreement that the process of determining compensation should not be unduly costly. Those subject to a taking should recognize that the social gains from compensation (i.e., proper incentives) can be dissipated through high settlement costs. This is common sense. If the negotiation and administration costs of determining the true value to the owner are high, it may be more socially efficient to ignore compensation altogether or to set arbitrary levels.[31] It should also be noted that there is generally (but not always) a positive relationship between low settlement costs and the predictability of the outcome of the compensation process. For example, if compensation policy unambiguously calls for paying the market value for the property, and if market value is easily determined, settlement costs are low and the outcome predictable (both government and the property owner can predict the compensation simply by looking at current market prices). Conversely, if market values are ambiguous, their estimation will be tedious, and ultimate values uncertain. In short, low settlement costs are generally consistent with the legal concept of reckonability: the notion that rules should be sufficiently certain to provide a sound basis for business planning and sufficiently predictable to facilitate dispute resolution.

Compensation to Achieve Fairness

To this point the discussion has focused on the role of compensation in directing resources to their best use. An additional and important goal of any public policy initiative is that it be viewed as fair. Fairness is of course important from an ethical perspective, but it also plays a role in economic decision making.

Even if government were always and everywhere a perfect welfare maximizing instrument, fairness requires that neither the burden nor benefit of public policy accrue disproportionately to an individual or group. In the context of compensation this notion is captured in some of the thinking about the purpose of private property guarantees intended "to bar government from forcing some people alone to bear public burdens which, in all fairness, should be borne by the public as a whole."[32]

The precise identification of what constitutes a fair or just distribution of costs and benefits is slippery. Clearly all citizens are expected to bear some of the costs and enjoy some of the benefits of policy initiatives. It is also clear that a fair distribution does not necessarily mean an equal distribution. A progressive income tax is by definition unequal but is generally viewed as fair. Additionally, empirical work suggests certain factors which influence the general perception of fairness. For example,

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31 Any payment (including zero) set by fiat will reduce settlement costs.

32 *Armstrong v. United States* 364 U.S. 40, 49, 4 L Ed 2d 1554.

horizontal equity (people in the same position should be treated equally) is more important than vertical equity (people in different positions should be treated proportionately differently), and most people believe that when property is taken, owners should at least be paid their out-of-pocket costs.[33]

The notion of fairness, or distributive justice, enters the analysis of compensation in two ways. First, the question of whether there has been a compensable taking is often decided by "whether the public at large, rather than a single owner, must bear the burden of the exercise of state power in the public interest."[34] In other words, compensability exists because the burden has become disproportionately large for the property owner.

Second, fairness enters the analysis through its relation to demoralization costs. Recall that these costs tend to be higher when individuals perceive that they bear a disproportionately large share of the costs, and when they do not see similar treatment of their peers. Perceptions of unfairness raise demoralization costs which in turn can have deleterious effects on future production.

In summary, fairness considerations can justify compensation on two grounds. First, fairness is desirable on ethical grounds. Second, perceptions of unfairness may distort private incentives and lead to future declines in welfare. The principle to be extracted from this is that unfairness is ethically wrong and may detract from social welfare maximization.

CONCLUSIONS

The conclusions to be drawn from this review of the principles underlying compensation policy are as follows.

First, in the event that a taking is compensable, compensation should be structured to provide correct signals to decision makers. Compensation policy should not encourage private investment in resources more highly valued in public use nor public investment in resources more valued in private use.

Second, the costs of reaching a settlement on compensation should be kept low. The higher are these costs, the less likely it is that compensation is needed to achieve efficient resource allocation.

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33 See Daniel Kahneman, Jack Knetsch and Richard Thaler, "Fairness as a Constraint on Profit Seeking," *American Economic Review*, Vol 76 (1986).

34 *Agins v. City of Tiburon*, 447 U.S. 255, 598 P 2d 25.

Third, compensation can help to satisfy fairness criteria. This in turn facilitates appropriate resource allocation.

PART FOUR

COMPENSABILITY AND THE BASIS FOR COMPENSATION

Having reviewed the principles which underlie a sound compensation policy, the next task is to address the mechanics of putting these principles into practice. For the purposes of this report the first step is to survey current practice in defining what constitutes a compensable taking. This is followed by a review of different methods used in calculating the level of compensation.

THE DETERMINATION OF COMPENSABILITY

As noted earlier, not all governmental actions that diminish the value of land or property can possibly be viewed as compensable takings. Otherwise, nearly every land-use regulation (zoning, land-use controls and by-laws, pollution regulations, speed limits) would require compensation. The issue is where to draw the line.

THE IDEAL

The theoretic answer to the question of where to draw the line is to compensate for those takings which if left uncompensated would create unacceptable demoralization costs and unacceptable perceptions of unfairness. Admittedly these are highly subjective criteria.

It seems safe to assume that a claimant would suffer less demoralization and feel less unfairly treated the less secure was the property right and the less was the reduction in property value. The homeowner who is prohibited from backyard burning is unlikely to feel strongly about the taking. Nor will friends and associates. The right to pollute is weak and the reduction in property value negligible and difficult to measure. The homeowner whose house is expropriated without compensation will have strong feelings. The freehold right is potent, and the loss is great and easily measured.

There is then a continuum. At one extreme are strong rights which if taken impose substantial, easily determined losses on the owner. At the other extreme are weak rights which if taken impose insignificant, difficult to measure losses. The boundary between compensable and non-compensable property rights is a judgement call, and, as will be shown in the following section, has received considerable attention from the judiciary.

COMPENSATION FOR TAKINGS IN CANADA

The following section outlines the basic legal principles and practices with respect to takings of private property, and elaborates upon some of the difficulties faced in an attempt to simply import these principles into the area of natural resource compensation.

The paradigm of expropriation is the acquisition by the state of privately owned land for public purposes. As a matter of government policy and legal principle, such expropriations are compensated. In the United States the compensation principle is, in fact, a constitutional right. The Fifth Amendment requires Congress to pay "just compensation" for the taking of property.

As in England, property rights are not entrenched in the Canadian constitution. There is no substantive legal requirement that compensation be paid for the taking of property. There is, however, a rule of statutory interpretation that presumes that the legislature does not intend to take property without compensation, unless the statute clearly requires otherwise. The leading English case, which has been followed in Canada, said that "The recognized rule for the construction of statutes is that, unless the words of the statute clearly so demand, a statute is not to be construed so as to take away the property of a subject without compensation."[1] This presumption in favour of compensation has been reaffirmed by the Supreme Court of Canada in a number of cases.[2]

The presumption in favour of compensation is only a presumption. Certainly, if the statute expressly states that no compensation is available, the courts will defer to the statute.[3] There are numerous examples. The *Municipal Act*, for example, provides that no compensation is available for reductions in property values due to zoning decisions (though where the by-law restricts the use of the owner's property exclusively to a public use there may be compensation available).[4] Similarly, no compensation is payable when

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1 *Attorney-General v. De Keyser's Royal Hotel, Ltd.* [1920] A.C. 508 at 542.

2 See, for example, *Manitoba Fisheries v. The Queen*, [1979] 1 S.C.R. 101.

3 Where the statute is silent about compensation there is legal debate over whether, in the absence of a legislative basis, there is a common law right to compensation. See, for example, *B.C. Medical Ass'n v. British Columbia* (1985) 15 D.L.R. (4th) 568: (where the statute is silent, but the obvious intent is not to pay compensation, no compensation is payable).

4 *Municipal Act*, R.S.B.C. 1979, c. 290, s. 972(1): Compensation is not payable to any person for any reduction in the value of that person's interest in land, or for any loss or damages that may result from the adoption of an official community plan, a rural land-use bylaw... But section 972(2) provides that this exemption from compensation does not apply where the bylaw goes so far as to restrict the use of land entirely to a public use. In *Re Columbia Estates Ltd. and District of Burnaby* (1975), 49 D.L.R. (3d) 123 (B.C.S.C.) the court held that a by-law restricting the use of property to

property is declared to be an agricultural land reserve.[5] Under the *Forest Act* there are a number of situations in which the termination of an interest is expressly declared to be non-compensable.[6] Similarly, under the *Mineral Tenure Act* the Minister may prohibit mining and no compensation is payable.[7]

Nor does the presumption of compensation necessarily dictate how compensation will be calculated. A statute may provide for compensation, but limit the amount, or define the method by which compensation will be calculated. For example, where private property is designated as a heritage site and its value is thereby decreased, the matter is not treated as an expropriation, but compensation may be paid to the owner in an amount set by Cabinet.[8] There are numerous examples from other jurisdictions, many of which are discussed in Appendix A-1.

It may seem that fairness requires compensation for takings, but this is deceptively simple, for it does not answer the question of what is and is not a taking. The problem of Crown regulation or reduction of resource interests is somewhat removed from the classical law of "takings" which deals more with governmental expropriation of privately owned land. Indeed, one of the problems in the area of resource regulation and takings has been the strained effort to accommodate natural resource tenures within classical property law, and to assimilate the alteration of resource allocations into traditional expropriation law.

What is a taking?

As one American judge explained, government "could hardly go on if to some extent values incident to property could not be diminished without paying for every such

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a parking lot was not a regulation, but a taking for public purposes and could only be accomplished through proper expropriation procedure.

5 Section 26 of the *Agricultural Land Commission Act* R.S.B.C. 1979, c. 9 provides that "Land shall be deemed not to be taken or injuriously affected by reason of its designation as an agricultural land reserve."

6 Section 63 of the *Forest Act*, for example, expressly precludes any claims against the Crown for "expiry, failure to extend, reduction, deletion or deeming under section 15(1), 19(b) and c, 20(3), 33(1) and (5), 37(1), 39(1), 44(3), 53 (except as provided in it), 54 to 57, or 95."

7 S.B.C. 1988, c. 5, section 15.

8 *Heritage Conservation Act* R.S.B.C. 1979, c. 165, s. 4. Section 4(3) provides that the amount of compensation paid "shall be deemed full and fair compensation for loss or damage suffered by the owner as a result of the designation."

change."[9] Thus, in most common law jurisdictions, including Canada, there is an important distinction between regulation and expropriation. Unlike land-use regulation, an expropriation only occurs when the owner of property has been deprived of that property by an expropriating authority and the owner's interest has been acquired by the government.

In some cases the application of this test is a simple matter. The typical expropriation scenario involves a clear taking of private land for a public purpose. For example, a landowner is deprived of property that is acquired by the government to build a highway or some other public work. But when we turn to resource interests, this test is more difficult to apply. There are a number of reasons for this. The first is that resource interests are very heterogeneous, and their legal status is often unclear. They may range simply from statutory permissions, to contractual licences, to full-blown "property." The second reason for uncertainty is that resource interests are not typically "expropriated" by government. Instead, the holder is simply unable to secure permits to exploit the resource, or some regulatory action by government, not aimed directly at the holder, incidentally affects the holder's rights. Judging where regulation stops and acquisition begins is fraught with difficulty. It is not surprising that in the area of resource interests, few governments have well developed compensation policies given the complex, differing nature of resource rights and the legal uncertainty about the status of those rights.

The determination of compensability for restrictions on the exercise of resource interests raises three basic questions:

(1) What interests amount to property?

(2) At what point does a government action (e.g., refusal of a permit, reduction of an allowable cut, etc.) amount to a deprivation of property, as opposed to a mere restriction on its use?

(3) In what circumstances can the government be said to have acquired property, as opposed to merely restricting the use of property?

Compensable rights

It is usually said that in takings law, only those rights that are proprietary and "vested" are compensable. A vested interest is one that is absolute in the sense that it

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9 *Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393, 67 L. Ed. 322 (1922).

does not depend upon some uncertain contingency. It "carries with it an existing right of alienation, even though the right to possession or enjoyment may be postponed."[10]

In the United States a slightly different terminology is sometimes used. In order to constitute property or a compensable interest, the interest must be "sufficiently bound up with the holder's reasonable expectations."[11] This latter definition of property implies something broader than the traditional notion of "property" or "vested interest."

Resource interests in public lands are defined by statutory instruments and contractual language. These interests are heterogeneous and because they are *sui generis* they do not always fit comfortably within traditional categories of property. A person's interest in a resource may be based upon a mere licence or statutory permission. A licence creates no interest in land, but merely prevents the holder from being treated as a trespasser. Depending upon its terms, it may be revocable at will without compensation. At the other end of the spectrum, the Crown may dispose of resource rights by conveying the fee simple to the holder, in which case he or she may have the full protection of a private landowner. Between these two extremes, the rights associated with resource interests vary in terms of exclusiveness, duration, transferability, comprehensiveness and legal recognition. There is debate and uncertainty surrounding the question of when contractual entitlements give rise to property interests.[12]

One of the more robust views of the "proprietary" nature of resource interests has been suggested as follows:

> ...all interests arising by contract are of that character inasmuch as they can be enforced and are regarded by the common law as being at least personal property in the form of *choses in action*.[13]

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10 *Blacks Law Dictionary* (St. Paul: West Publishing Co., 1968).

11 *Penn Central Transportation Co. v. New York City*, 438 U.S. 104, L Ed. 2d 631, p. 648.

12 See, for example, *B.C.M.A. v.British Columbia* (1983) 148 D.L.R. (3d) 718 (B.C.S.C.) in which Wallace J. held that the contractual right of doctors to "balance bill" was not a compensable property right and that subsequent legislative prohibition did not, in any event amount to expropriation because nothing was "acquired" by government. Upheld on different grounds (1985) 15 D.L.R. (4th) 568 (B.C.C.A.) See also *Re Sanders and Milk Board* (1991) 77 D.L.R. (4th) 603 (B.C.C.A..) in which it was held that milk quotas are not compensable property.

13 Rowland Harrison, "The Legal Character of Petroleum Licences," *Canadian Bar Review*, Vol. 58 (1980) pp. 483- 499.

By way of contrast, resource interests may be viewed as existing only at the pleasure of the Crown. If the resource right is granted by the Crown in its legislative capacity,

> ...it could be argued that these rights do not give rise to any vested or acquired interest. The argument would build upon the principle that the Crown cannot bind itself in its legislative capacity. Therefore, any rights issued in the exercise of that capacity would be subject, *ab initio*, to the possibility of a further exercise of legislative capacity derogating from them. They would exist at the pleasure of the legislature and could hardly be described as vested or acquired.[14]

An Australian case provides an illustration of this latter view.[15] A mining company had been granted statutory based authorities to prospect by the Minister. They carried out extensive prospecting, made discoveries of valuable minerals and applied for mining leases. Objections were lodged with the Minister by persons concerned to preserve the environment in the region and the government refused to grant the leases. The company sued on the basis that the contractual authority under which it carried out its prospecting expressly provided that the holder had a right to acquire a mining lease. The Privy Council refused any remedy. The Minister, said the court, was not obliged to grant the lease (and could not bind himself to do so in advance), and had discretion over its contents. The authorities gave the appellants no legal rights to enforce.

Thus, there are two very different positions. One says that resource interests should generally be treated as property in order to provide security of tenure; the other says that all resource interests on Crown land exist only at the pleasure of the Crown. This latter position is based on the notion either that the interests are purely a creation of the legislature, or that every contractual interest carries with it an implied condition authorizing legislative alteration.[16]

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14 Harrison (1980), p. 500.

15 *Cudgen Rutile (No. 2) Pty v. Chalk* (1975) A.C. 521 (P.C.).

16 See, for example, the B.C. Petroleum and Natural Gas Lease in Andrew Thompson, "Legal Characteristics of Disposition Systems: An Overview," in Bankes and Saunders ed., *Public Disposition of Natural Resources* (Calgary: Canadian Institute of Resources Law, 1983) 1 at p. 17:

> The lessor doth hereby grant unto the lessee, in accordance with and subject to the provisions of the *Petroleum and Natural Gas Act*, all Crown petroleum and natural gas in the location herein described, and the lessee doth hereby covenant and agree at all times to perform, observe and comply with the provisions of the said Act, and amendments made thereto from time to time enacted, and the provisions of any regulations which may from time to time be made under the authority thereof, and all such provisions as are from time to time enacted or made shall be deemed to be incorporated into these presents and shall bind the lessee in the same manner and to the same

Mineral claims are said to be chattel interests,[17] while mining leases are said to be interests in land.[18] There is, however, uncertainty in this province with respect to the implications of these classifications, which has resulted in ongoing litigation. The legal character of timber interests is also complicated, though some opine that a Tree Farm Licence and other timber tenures are like a *profit a prendre*.[19] The Commission has not attempted to detail the legal nature of each existing resource interest. It has not been asked to provide legal advice concerning the current status of each interest, but rather policy advice regarding how those interests should be treated in the future. This turns, of course, on the degree of security that is necessary for the resource holder, balanced against the required flexibility of government to alter resource allocations in the future. Many of the submission to the Commission have focussed on the legal classification of various resource interests. However, the legal classification of each interest as proprietary or non-proprietary, vested or non-vested, real or personal, should not drive public policy regarding natural resources and compensation. Policy objectives should drive the definition and classification of each interest.

One thing that can be said is that the definition of resource interests should be clarified. The absence of clear agreement on their status, and on principles of compensation, gives rise to conflicts between resource holders, interest groups and governments. At the present time these conflicts are not easily resolved through negotiation and give rise to unnecessarily expensive and acrimonious litigation. In effect, the lack of a clear definition of what is compensable has raised settlement costs to an unacceptable level.

The requirement of an acquisition

The second requirement for compensability in a typical expropriation case is that the government must be shown to have acquired the property. The acquisition requirement has been explained as requiring that

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extent as if the same, as they are enacted, made, or amended, were set out herein as covenants on the part of the lessee.

17 Section 24, *Mineral Tenure Act*.

18 Section 43, *Mineral Tenure Act*.

19 N.D. Bankes, *Crown Timber Rights in Alberta* (Calgary: Canadian Institute of Resources Law, 1986).

> property is actually taken possession of, or used by, the Government, or where... it is placed at the disposal of the Government. A mere negative prohibition, though it involves interference with an owner's enjoyment of property does not... carry with it at common law any right to compensation.[20]

In cases where resource holders are simply prohibited from exploiting those resources, the acquisition test is very difficult to apply. Canadian courts, however, have taken a view of the matter that would appear favourable to the resource holder. In the 1978 case of *Manitoba Fisheries*,[21] for example, a fish exporting company successfully sued for compensation when it was put out of business by a federal law creating a crown corporation with a monopoly. The statute provided compensation for the diminished value of the owner's equipment, but not for lost business goodwill. The company was successful in the Supreme Court. The Court held that while there had been no expropriation of the company's physical property, the law had rendered that property useless for its purpose and had "taken" the company's business goodwill. In *Manitoba Fisheries* there does not, at first, seem to be an *acquisition* of property by the government. However, the court held that in creating a monopoly in its Crown corporation the government had indeed acquired the goodwill and customers of the plaintiff.

The scope of *Manitoba Fisheries* is problematic. It should be contrasted with similar cases in which courts have not required compensation. For example, in one instance, the operator of a fish farm was put out of business when a regulation prohibited that type of activity in the area. The court denied that there had been an expropriation and refused compensation on the basis that there had been no acquisition of value by the government.[22] Reflecting the courts' concern not to stifle government action, Marceau J. added that:

> If the legal proposition on which this action is based were to be admitted, and the adoption or amendment of a regulation such as that in question here were to be regarded as constituting a disguised act of expropriation with respect to anyone whose commercial activities were interfered with thereby, it is easy to imagine the proliferation of claims that would follow. There is no doubt that the establishment or amendment of a regulation of this kind may create extremely unfortunate situations, and the action appears to provide a striking

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20 *France Fenick & Co. v. The King*, [1927] 1 K.B. 458, at 467.

21 [1979] 1 S.C.R. 101.

22 *La Ferme Filibier Ltee v. The Queen* [1980] 1 F.C. 128.

> example of this. If however, in such special cases, the government has not made any exceptional provision for the payment of compensation, there is no legal principle I know of which can force it to do so.[23]

In Australia (where there is a constitutional guarantee of property rights) there must similarly be an acquisition of property by the Crown. This is illustrated by the dispute over the Tasmania Wilderness.[24] This area was declared a world heritage site and subsequently the Commonwealth government passed a law preventing the state of Tasmania from building the Franklin Dam within its limits. The Supreme Court of Australia decided that there had been no taking of property even though the law essentially sterilized the area from commercial development. The acquisition issue in British Columbia land use restrictions is described in the next section.

Regulation or expropriation? The British Columbia cases

When dealing with resource interests, one of the more difficult tasks is to distinguish between mere regulation and expropriation. Land use controls such as zoning are not forms of expropriation because, while they may affect the value of property, they neither deprive the owner of property nor transfer that property to an expropriating authority. But a complete prohibition of the use of property may amount to a complete deprivation. This is illustrated by recent disputes in British Columbia regarding the elimination of mining activities in parks.

The first case is *The Queen in Right of British Columbia v. Tener*.[25] Tener held a mineral claim that had been granted in 1937. Two years later, Wells Grey Park was created (or reserved), and the park area included the claims. The claims were kept in good standing, but not worked. In 1965, a new *Park Act* provided that no mineral extraction could take place without a park use permit. In 1973 the park was changed from a Class B to a Class A park. Tener applied for permits in 1973 and again each following year. In 1978 he was informed that under present policy, no exploration and development work would be authorized and that no park use permit would be granted. The claimant had paid $100,000 to the previous holder for the claims, and claimed $1,500,000 for previous expenditures and $3,000,000 for the lost opportunity to mine the claims. The Supreme Court of Canada held that even though there had been no formal expropriation of the plaintiff's claims, there had been a compulsory taking of the plaintiff's right of access to the minerals. As Wilson J. said:

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23 *Ibid.*, at p. 130.

24 *The Commonwealth v. Tasmania* (1983), 57 A.J.L.R. 450.

25 (1985) 17 D.L.R. (4th) 1.

> While the grant or refusal of a licence may constitute a mere regulation in some instances, it cannot be viewed as a mere regulation when it has the effect of defeating the respondent's entire interest in the land. Without access the respondents cannot enjoy the mineral claims granted to them in the only way they can be enjoyed, namely, by the exploitation of the minerals.[26]

The "acquisition issue" also arose in *Tener* because there initially appears to be no acquisition of the holder's property. Nevertheless, the court held that the Crown had by its action taken something of value from the resource holder and enhanced the value of the park. This, reasoned the court, amounted to an acquisition, unlike mere zoning or prohibition of certain forms of land use which "adds nothing to the value of public property."[27]

Mineral claims in Strathcona Park have also resulted in actions against government. In *Casamiro Resource Co. v. A.G.B.C.*[28] the British Columbia Court of Appeal held that the Crown had expropriated 19 Crown-granted mineral claims and ordered compensation to be determined pursuant to the *Expropriation Act*. The claims had been located in 1938 and 1939, after the establishment of the park. In 1946 and 1947 the Crown grants were made. In 1988, by order in council, it was decided that no resource use permits would be issued for mineral exploration in the park area. The court held that the order in council amounted to a taking of Casamiro's rights because it "reduced the Crown grants to meaningless pieces of paper." The court explained:

> The diminution of rights does not always amount to a taking which as a matter of law is equivalent to expropriation. Whether in any given case the acts done by the government are so equivalent is a question of mixed fact and law. Here, as I have already said, the grants have been turned into meaningless pieces of paper. By legislative act they could be turned back into pieces of paper with meaning but no such legislative act has occurred.

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26 *Ibid.* p. 24.

27 p. 12. Also, per Estey J: "The denial of access to these lands... amounts to a recovery by the Crown of a part of the right granted to the respondents in 1937." (p. 11) Wilson J: "By depriving the holder of the profit of his interest - his right to go on the land for the purpose of severing the minerals and making them his own - the owner of the fee has effectively removed the encumbrance from its land... (making) the respondent's loss the appellant's gain."

28 (1991) 55 B.C.L.R. (2d) 346 (C.A.).

Another case involving Strathcona Park is *Cream Silver Mines Ltd. v. The Queen in Right of British Columbia.*[29] The plaintiff had obtained registered mining claims in the park. Following the park's upgrade from a class B to class A park, the Minister no longer had any discretion to issue a park use permit for exploration and mining. The court followed *Tener* and *Casamiro* and held that the plaintiff had been prevented from working its claims and that its interest had been expropriated. The court rejected the argument that because a mineral claim is a chattel interest (rather than an interest in land) there might be no requirement or presumption of compensation. This case is currently under appeal. The Crown is taking the position that because the claims are not "interests in land" they cannot be compensated pursuant to the *Expropriation Act.*[30] The Crown is also arguing that restrictions on mining were already in place when the company acquired its claims. This, they argue, means that the rights were not "vested" and therefore there was no taking.

Because these latter two cases are still *sub judice*, the Commission will not comment further upon them except to note the air of antagonism that these disputes have generated, the length of time that they have been ongoing, and the large costs associated with their resolution. Similar comments should be made in respect of *Tener*. After going to the Supreme Court of Canada, this case was finally settled recently for a sum that is less than the settlement costs borne by the government, the taxpayer and the company.

Compensation for Takings in the United States

American law on the issue of takings is complex because the analysis is infused with unique constitutional doctrine. Over simplifying somewhat, it can be said that a taking occurs either as an expropriation (similar to Canada) or, as an unjustified and overly burdensome regulatory restriction on land use. A regulatory restriction on land-use may be justified when its purpose is to prevent a nuisance; that is, injury to the legitimate interests of the community or its members. Beyond the nuisance exception, regulatory restrictions (non-invasive) that diminish the value of property are still not necessarily takings.

> The distinguishing characteristic between eminent domain and the police power is that the former involves the *taking* of property because of its need for the public use while the latter involves the *regulation* of such property to prevent the use thereof in a manner that is detrimental

29 (1991), 85 D.L.R. (4th) 269 (B.C.S.C.)

30 In an earlier case the court held that a claim is a chattel interest and not an interest in land: *Cream Silver Mines Ltd. v British Columbia*, (1986), 27 D.L.R. (4th) 305 (B.C.S.C.).

> to the public interest. The police power may loosely be described as the power of the sovereign to prevent persons under its jurisdiction from conducting themselves or using their property to the detriment of the general welfare.[31]

The distinction between regulating and taking is not always clear. As in Canada, land-use planning and zoning, even though it may diminish the value of property, does not constitute a taking. Indeed, in the leading case, the zoning decision (prohibiting commercial use) diminished property value from $10,000 per acre to $2,500 per acre. The court held that zoning was a valid exercise of the police power.[32]

However, in the United States regulations may be considered to be takings and increasingly, environmental protection laws are being challenged in the courts. There are essentially two tests in the United States as to when a regulatory taking occurs.[33] The first is the "substantial advancement" test: "a taking can occur where the imposition of a governmental regulation fails to substantially advance a legitimate governmental interest." The second is the "economic viability" test which asks whether the regulation deprives the owner of all economically viable uses of the land.

The first test allows government to exercise its powers to prevent property owners from using their rights to injure others. Under this "nuisance exception," even the most severe restrictions are not considered to be compensable takings. The second test focuses more on the impact of the regulation on the owner. The court examines the economic impact of the regulation and its "interference with investment-backed expectations." The devaluation must be substantial and leave practically no use of the land for the owner. For example, in the zoning case mentioned above, a 75% decline in land values was held not to be a taking because the owner could still build residential dwellings.[34]

The law of regulatory takings is in such flux that it is dangerous to make generalizations. Indeed, the U.S. Supreme Court has candidly admitted that it "has been unable to develop any 'set formula' for determining when 'justice and fairness' require that economic injuries caused by public action be compensated by the government rather

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31 Nichols' *The Law of Eminent Domain*, 3rd edition (New York: Matthew Bender, 1985) Vol. I, s. 1.42, pp. 1-127 to 1-131.

32 *Village of Euclid v. Ambler Realty Co.* 272 U.S. 365 (1926).

33 From John DeVault, "Regulatory Takings: Can the Government be Liable?" *Natural Resources and Environment*, Vol. 6 (1991) p. 10. See *Agins v. City of Tiburon* 447 U.S. 255, 598 P. 2d 25.

34 *Village of Euclid v. Ambler Realty Co.* 272 U.S. 365 (1926).

than remain disproportionately concentrated on a few persons."[35] The following examples from the recent takings jurisprudence should be read with this in mind.

In *Florida Rock Industries Inc. v. United States*[36] a company intending to mine limestone purchased about 1,560 acres of wetlands near the Everglades in 1972. Later that year a water pollution law was passed requiring permits prior to discharging materials into the water. Unaware of this law, the company began its mining operations in 1978, but was ordered to stop. No permit was granted due to a policy to preserve the wetlands environment. The company sued and was successful in the Court of Claims which held that the regulations had deprived it of all economically viable use of the property. The Court of Appeal overruled this decision on the basis that the property might have remaining value to the owner, based on the possibility of sales to investors who value the chance that the restrictions might be removed. On remand, the claims court found again that the denial of a permit was a taking. They considered, but denied, that there were knowledgeable investors still willing to buy the land.

The economic viability test was also applied in the case of *Whitney Benefits v. United States*.[37] In 1973 the owner purchased an option to lease mining rights to a coal estate. It later purchased the surface rights over the coal deposit in order to facilitate mining. In 1973, Congress enacted a law prohibiting surface mining without a permit (to preserve agricultural land). The court held that the effect was to deprive the owner of all economically viable use of its coal property.

What are the limits to a regulatory taking? Two Supreme Court decisions provide some guidance. In *Keystone Bituminous Coal Association v. DeBenedictis*,[38] the U.S. Supreme Court held that the *Pennsylvania Subsidence Act* did not constitute a taking. The Act required coal mines to leave pillars of coal in the ground beneath surface structures. The purpose of the law was to protect against surface subsidence and to protect owners (third parties) of surface structures. The court held that the law might be upheld under the nuisance exception; that is, that it was designed to prevent the use of property rights so as to harm others. It went on to hold independently that the regulation was not a taking because, while the *Act* did prevent the mining of some of the coal, it did not make it "commercially impracticable" to mine coal. The Act prevented the owners from mining only about 2 percent of the total coal in their field. In other words, the court looked at the effect of the regulation on the entire operation of the coal mine.

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35 *Penn Central Transportation Co. v. New York City* 438 U.S. 104, L Ed 2d 631, 648.

36 21 Cl. Ct. 161 (1990).

37 926 F. 2d 1169 (1991).

38 480 U.S. 470 (1986).

Another example is the case of *Penn Central Transportation Co. v. New York City.*[39] The United States Supreme Court was called upon to consider New York's *Landmark Preservation Law*. Under this law the Grand Central Terminal, owned by Penn Central, had been declared a landmark. This designation subsequently prevented Penn Central from building an office tower over the Terminal. It argued that this was a taking of its property (especially a taking of its airspace). The court held that there had been no taking. The law left the owner in possession of the building and able to use it in order to earn a reasonable return on its investment. The court, while admitting that there was no set formula, suggested that "several factors have particular significance."

> The economic impact of the regulation on the claimant and, particularly, the extent to which the regulation has interfered with distinct investment-backed expectations. So, too, is the character of the governmental action. A "taking" may more readily be found when the interference with property can be characterized as a physical invasion by government... than when the interference arises from some public program adjusting the benefits and burdens of economic life to promote the public good."[40]

The most recent U.S. Supreme Court decision on takings is *Lucas v. South Carolina Coastal Council.*[41] Here, the *Beachfront Management Act*, an environmental protection law, prohibited the construction of homes on the plaintiff's two beachfront lots. The court held that the law, which it assumed had rendered the plaintiff's property valueless, probably effected a taking (leaving it to the remand court to decide whether the law might be justified on the basis of previous restrictions on development).

The Supreme Court overruled the lower court which had concluded that the law was designed to prevent a harmful use of the plaintiff's property and that no compensation was owing. The court stated that where the law eliminated all economically viable use of the property, compensation would be payable except where the law was designed to prevent a nuisance. It denied that the nuisance exception could be invoked in any situation where the regulation was simply in the public interest. The

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39 *Penn Central Transportation Co. v. New York City* 438 U.S. 104, L Ed 2d 631.

40 *Penn Central Transportation Co. v. New York City* 438 U.S. 104, L Ed 2d 631, 648.

41 (1992), 60 L.W. 4842.

court appears to have narrowed the nuisance exception to situations where the regulation merely restates a previous restriction on property, or one that would be expected.[42]

The *Lucas* decision further illustrates the difficulties in this area of the law, and does not provide a clear rule of decision. Compensation appears to be triggered by the fact that 100 percent of the value of the property was taken. The case leaves open whether less than 100 percent diminution in value might trigger compensation. The case deals with the strong interest of real property ownership and leaves open the precise nature of the nuisance exception to the requirement of compensation.

CONCLUSIONS : COMPENSABILITY

The current regime is unsatisfactory for a number of reasons. There is uncertainty concerning the legal nature of resource interests. Issues concerning renewal, cancellation, withdrawal and compensation are rarely addressed expressly in sufficient detail in the legislation or in contracts. Lawyers argue over the legal classification of those interests (proprietary versus non-proprietary, personal versus real). And because there has been so little litigation involving resource interests, judges are forced to rely upon precedents developed in very different contexts. The distinction between governmental regulation and expropriation is a slippery one, and the question of when a government "acquires" property is not always easy to resolve. What governments perceive to be legitimate restrictions on development in the public interest, will be perceived by others as forms of expropriation. Third, even where there has been a taking, there is some debate over whether, in the absence of a statutory basis, there is a right to compensation.

These problems have several consequences. Uncertainty is both costly and a source of insecurity for resource holders. It makes it difficult for the affected parties (governments and resource holders) to predict the consequences of their decisions and plan for the future. Uncertainty causes and prolongs conflict, reducing the likelihood of amicably negotiated settlements. Uncertainty increases the chances that the dispute will end up in courts. This has several consequences. It means that resource interests must be defined by the judiciary, not on the basis of broad policy considerations, but rather on the basis of slim and sometimes inappropriate precedents. Courts are forced to rely upon and

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42 The state "may resist compensation only if the logically antecedent inquiry into the nature of the owner's estate shows that the proscribed use interests were not part of his title to begin with" (p. 4848).

"Any limitation so severe cannot be newly legislated or decreed (without compensation), but must inhere in the title itself, in restriction that background principles of the State's law of property and nuisance already place upon land ownership" (p. 4849).

apply ancient concepts that were never intended to solve modern problems. Additionally, litigation further escalates settlement costs which may become out of proportion to the values at stake. Increased settlement costs also threaten to exclude less powerful resource holders from fair and equal treatment.

Takings: a legislated definition?

The question is how far the Commission should go in recommending legislation to clarify the status of resource interests and a compensation regime. In Part Six it is recommended that both mineral and forest tenures should be protected, and that when taken they should be compensated. Specific compensation methods are spelled out. These proposals should significantly mitigate the present uncertainty.

The remaining question is whether the Commission should go further and specify exhaustively those situations that do and do not amount to a compensable taking, or offer a comprehensive definition of takings. The concept of a "taking" is defined broadly in the terms of reference: "terminated or otherwise reduced or limited." Not every "termination" "reduction" or "limitation" could possibly give rise to a right of compensation. The issue, then, is whether the Commission should seek to define exactly what forms of government action should be considered to be a compensable taking. This would involve developing a statutory definition in place of the present *ad hoc* common law and legislative approaches.

The ostensible advantage of a clear definition is that it would provide some certainty and predictability. It would signal both to government and resource owners the legal and financial consequences of government action. It would enhance dispute resolution. These advantages may, however, be illusory.

There are reasons why a single "catch-all" definition may not be feasible or desirable. First, it appears that no one else has been able to do it. Other jurisdictions are struggling with this very issue and none provide a clear, non-controversial rule that significantly reduces litigation. A narrow definition would be under inclusive while a broad definition would be over inclusive. An arbitrary definition (such as the *Lucas* requirement of a total deprivation) would be more easily administered, but would be unfair.

Second, takings issues arise in many contexts. Increasingly, disputes arise out of regulatory restrictions on certain activities rather than simple expropriation. It would be difficult, perhaps impossible to frame a single rule suitable for all contexts. There is a multiplicity of ways in which takings disputes are likely to arise in the future, most of which are unpredictable at this time. A definitive rule set down now would inevitably soon prove inadequate.

The clear case

An action by government which satisfied the following criteria would generally be viewed as a clear taking.

a) the government action entirely deprives the owner of property or eliminates its value; and

b) the deprivation or elimination is permanent; and

c) the government acquires the property for itself; and

d) the action is not an exercise of criminal law, nuisance, taxation, zoning or analogous powers; and

e) the action was not previously authorized by the terms of the licence or legislated conditions;

When these conditions are not satisfied, the definition of a taking becomes harder.

The hard cases

A conclusive definition would have to consider all those situations where some element of the "clear case" was missing. More specifically it would have to deal with partial, regulatory and temporary takings.

Restrictions on the exercise of rights that do not totally eliminate the value of the right may be what are called partial takings. Many people are of the opinion that a taking should not require a 100 percent diminution because this is too arbitrary, and unfair to the person who loses 99 percent of their property. Yet once an arbitrary figure is abandoned, there is no way of defining in advance a clear distinction between "diminution" and "deprivation."

A comprehensive definition would also have to spell out when a regulatory restriction amounted to a taking rather than a legitimate restriction. This involves a host of issues. Some regulations, especially those that are well established, may eliminate all value, yet not be considered a taking (e.g., inability of the holder to satisfy environmental or other regulatory requirements, to secure permits and consents, or where the use of the property causes harm to others). However, other regulations (e.g., a new, permanent restriction on the exercise of the right in order to secure a greater public benefit such as a new park) will be considered takings. No final definition has been developed by the courts of Canada or the United States. Instead, courts seek to determine on a case by case basis whether the regulation "goes too far," and whether the burden of the action falls unfairly on the shoulders of one person.

A complete definition would also have to distinguish between a taking and a temporary suspension of a right. In many jurisdictions there is a requirement that the deprivation be "final," "conclusive" or "permanent." Yet there can be no hard and fast rule. In many cases there is a possibility (though often remote) that the restriction on the right may be removed at some time in the future and that its value may revive. This is particularly relevant for restrictions on the use of non-eroding assets. Yet once again, any definitive formula would be arbitrary and likely unworkable.

Recommendations

A single comprehensive definition is not desirable. At any rate, because of the principle of legislative supremacy in this area, the issue will always ultimately be a political one. Instead of developing a single definition, the Commission recommends that the determination of the right to compensation be specified on a case by case basis. This will occur in two ways. First, governmental action that significantly impairs the value of resource rights should, wherever possible expressly address the compensation issue. Secondly, where the legislation does not expressly address the matter, courts will continue to resolve disputes on a case by case basis.

In determining the right to compensation, the values that must be balanced are the desire to provide the necessary security of investment and the need to preserve governmental flexibility. Decision makers must consider the degree of demoralization, the impact on the investment climate and issues of fairness and distributive justice. Among the factors that are helpful in striking this balance are the following:

a) the character of the regulation (e.g., whether it is designed to prevent a harmful use of property, or secure a public benefit; and whether the use of property was simply prohibited, or the property actually appropriated to public use);

b) the degree of interference or deprivation (ordinarily the deprivation must be total or near total, or render the property "virtually worthless");

c) the strength of the investment backed expectations and the extent to which the interference was or was not anticipated by the owner (having regard to the contractual and legislative framework);

d) whether the burden of the action falls disproportionately on one or only a few persons;

e) whether the deprivation is permanent or temporary and if temporary, the duration (ordinarily, suspensions of rights should be short-lived and governments should decide quickly and with finality whether the right will be taken).

THE BASIS FOR CALCULATING COMPENSATION

This section deals with the "mechanics" of compensation. Assuming that compensation is justified, and that the taken property is in fact compensable, how is the correct level of compensation to be determined? Historically the courts have favoured a "market-value" basis for compensation. This makes sense in the case of the conventional expropriation scenario (i.e., the taking of private land). Unfortunately in the case of resource interests this value is not always so easy to identify.

THE OPTIONS

Returning for a moment to the earlier discussion of the rationale for compensation, it is noted that payment can be based on utilitarian grounds in order to avoid demoralization costs which in turn, if imposed, can create a misallocation of resources over the long run. Payment can also be justified on the basis of distributive justice.

The object then, in setting the level of compensation, is to avoid imposing such significant demoralization costs that future production is significantly impaired, and to avoid engendering gross feelings of unfairness on the part of the claimant and society in general. It is also important not to introduce perverse incentives into the system, such as moral hazard or rent seeking. Unfortunately this statement of objective is shot through with subjective terms such as "significant" and "gross" which complicate quantification of the ideal level of compensation.

It is clear that there can be no demoralization costs and no sense of unfairness if the claimant's reservation price is paid. Recall that the reservation price is exactly the amount necessary to make the property owner indifferent over the taking. Payment above the reservation price will introduce incentives to seek rents (i.e., seek to be taken) and therefore should be avoided. Payment of the reservation price will solve the demoralization and fairness problems but will not correct the moral hazard problem (i.e., ignoring the risk of expropriation). Payment of less than the reservation price will tend to solve the moral hazard problem but runs the risk of demoralization and unfairness. This points to the conclusion that payment should be something less than the full reservation price (to avoid the moral hazard distortion) but not too much less (to avoid demoralization and unfairness).

The practice of emphasizing market value in compensation proceedings reflects an attempt to identify (easily) the owner's reservation price. If the government takes private land which has a market value of $100, and if there is an active market where the owner can easily find and buy an identical piece of land for $100, she should be

indifferent over the taking. Her reservation price has been met. In some cases she might well be better off after this transaction. This would occur when she benefited from reallocation (e.g., she used the park for which her land was taken). In other instances she might be worse off (e.g., the land had been in the family for a century and had sentimental value).[43] Generally, but not always, a deviation of the market price from the reservation price is less likely for commercial property than for personal use property. The entrepreneur is less likely to attach sentimental value to commercial property.[44]

This leads to the conclusion that generally market price is a good proxy for the reservation price. Problems emerge however when there is no deep, transparent market for the taken property from which to draw a market comparable. This is a particularly intractable problem with respect to natural resources because they are, by their very nature, heterogeneous and in the case of minerals, unknown until exposed. For this reason alternative proxies have been sought, amongst them cost based evaluations.

The distinction in legal writings between cost based and market based evaluation is somewhat puzzling to the economist. This is because in competitive markets the sum of economic costs should approach market value. Consider the following example.

A contractor builds a house in a remote subdivision and before it is sold government realizes that the subdivision is too close to a proposed toxic waste dump and takes the land and everything on it. There is no market for houses in this region, so a market price is not available. What is the market value of the house? In essence, the value of the house is the present value of all economic costs that went into building the house. These would include explicit costs (e.g., the building lot, nails, wood, and cement), depreciation (e.g., wear and tear on the tools) and implicit costs (e.g., the value of the contractor's time if he was unsalaried). Some of these costs would have to be inflated to present values (i.e., they were incurred in the past and the money could have been earning interest). If the housing market were competitive (there were 100 contractors working in the subdivision), no input could have commanded more than its market rate of return. In this case, economic costs approximate market value.

However, a problem can surface if the contractor claims that this house was better situated than any other and therefore would have commanded a higher price than the competitive norm. This cannot be known because the house will never be sold. The

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43 See Jack Knetsch, *Property Rights and Compensation: Compulsory Acquisition and Other Losses* (Toronto: Butterworths, 1983) for a discussion of these issues.

44 There are obvious exceptions. A forest company might benefit directly if land were taken to improve a public highway between the logging show and the sawmill. Also, as reflected in submissions to this Commission, mining claims can have sentimental value, particularly when the claim holder has lived on the property.

problem can be addressed in several ways. First, if the higher price was based on luck (the contractor inadvertently bought the best lot) cost based compensation will both over and under compensate individuals but in the aggregate will approach market value.[45] Second, if this contractor has particular acumen in selecting lots, inferior contractors will be displaced and eventually the superior contractor will become the average. Before leaving this example, one additional problem can be identified. What is to be done for the contractor who started construction, realized completion was impossible (the lot is on unstable ground and correction of the problem would be prohibitively expensive) and abandoned the project? Obviously cost based compensation exceeds this contractor's reservation price which is self-revealed to be zero.

The preference of courts for market based over cost based estimates of value in compensation cases is undoubtedly attributable in part to efficiency considerations. In ordinary expropriation proceedings it is far easier to find a market price than to accurately sum and adjust past costs to generate a present value. Nonetheless it is recognized that when market prices are not available, cost-based estimates can serve as a proxy. A leading authority on Canadian expropriation law describes the approach as follows:

> In the cost approach, sometimes known as the contractor's or quantity survey method, an estimate is made of the current cost of reproducing the existing improvements on the subject property or the cost of replacing the improvements with those of equal functional utility. To the reproduction or replacement cost of the improvements is added the estimated market value of the land determined by one or both of the comparative or income approaches. The resultant product is an estimate of the value of the subject property. The cost approach is based on the economic theory that value equals the cost of production.[46]

Before leaving this discussion of the equivalence of cost based and market based valuations, the problem of economic profits must be addressed. Normal profits are returns to capital necessary to keep capital in a particular use. Without this return, owners would redirect their capital to other pursuits with higher returns. Economic profits are returns above normal profits. By definition economic profits are not necessary to keep capital in its current use (only normal profits are required). This leads to a problem. What should policy be if a property owner's reservation price includes the present value of a stream of economic profits? The answer is, from a utilitarian

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45 The contractor who bought the below average lot will be over compensated.

46 Eric Todd, *The Law of Expropriation and Compensation in Canada* (Toronto: Carswell, 1976), 151.

perspective, the loss of economic profits need not be compensated. The reason is as follows. The rationale for paying the owner's reservation price is to avoid demoralization which might lead the claimant, associates and sympathizers to redirect their investments in the future. However, since economic profits are short-lived in competitive markets, there will be little incentive to redirect capital.

There are of course situations where economic profits are persistent. For example, a monopolist may be able to persistently reap economic profits if it can inhibit entry to the industry and restrict supply. Economists view these super-normal returns as unearned and symptomatic of inefficiency in the allocation of resources. Another source of economic profits is attributable to the fact that some natural endowments are more productive than others. This difference in productivity, which has nothing to do with human effort, will generate economic profits if market demand drives price up to cover the costs of working less productive natural resources. For example, if demand cannot be satisfied by the most productive oil wells, less productive wells will be drilled and the price of oil must rise to cover their costs. The owners of the productive wells will then receive a windfall gain (this is known as a resource rent). This gain is not necessary to keep the productive wells in operation. If it is taxed (or conversely, if in the event of a taking it is not compensable) this will not cripple the petroleum industry.

This latter form of economic profits, called resource rents, is relevant to this inquiry on two grounds. First, from an efficiency viewpoint, such rents need not be paid to keep resources employed. Second, from a distributive justice perspective ownership of these resource rents may be in question. A compelling argument can be made that such resource rents belong to the commonweal and not to the resource interest holder.

Some American scholars have argued that recent trends in takings law indicate that courts are willing to refuse compensation when the taking amounts only to an expropriation of economic profits. In *Keystone* (one of the coal cases) the court focussed on the economic viability of the entire operation rather than the specific coal affected by the regulation. As Justice Rhenquist pointed out in that case, the Act did in fact prevent the company from mining 27 tons of its coal. It is hard to see how ordering the owner to leave 27 tons of coal in the ground is different from "taking" 27 tons of the owner's coal after it has been mined. Commenting on the *Keystone* decision, T.N. Tideman suggests that it may be an example of the court implicitly recognizing that land and natural resources are not components of capital. Referring to the coal fields, he says:

> Because these assets are not economic investments their existence does not depend on an expectation of returns from owning them. Thus, the political reallocation of the support estates to the owners of the surface estates does not frustrate an investment-backed expectation and threaten to discourage investment generally. The only discouragement

> of investment is that any uncertainty as to whether the supporting coal will be required to be left in place adds to the uncertainty of the returns from the combination of purchasing and developing coal mines, and therefore reduces the attractiveness of investment in them.
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> There are some true economic investments in the operation of coal mines, such as geological surveys and shaft construction, and a claim for compensation based on the loss of value of these is not subject to the same analysis. If government actions reduce their value, investment *is* discouraged.[47]

Susan Rose-Ackerman agrees with this analysis. She states that no taking occurs when the state is merely exercising its authority to appropriate excess profits or economic rents. This, she says,

> provides a justification for the Supreme Court's refusal to find a taking in *Keystone*. The court found that all mines would continue to operate and that the losses would not be severe. This finding, if correct, implies that the companies were earning excess profits that could be used to pay for the regulation without causing anyone to go out of business.[48]

Further support for this view can be found in the courts' consistent refusal to find that rent control legislation, and price regulation, are forms of taking under U.S. law.[49] Such regulations are a recognition that economic profits justify state action. And interestingly, in New Zealand valuators clearly distinguish between the reduction in the value of the rights (to mine or log) and the reduction in the value of the owner's business. The right to extract a publicly owned natural resource has value only if government sets royalties below true resource rents (recall the earlier discussion of windfall gains attributable to the different productivity of natural resources). The value of the right to the natural resource reflects the present value of the stream of resource rents not captured by government through the royalty system.

An alternative method of determining market value is the income method which involves discounting a future stream of net revenues to the present. In competitive, well

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47 T. Nicolaus Tideman, "Takings, Moral Evolution, and Justice," *Columbia Law Review*, Vol. 88 (1988) pp. 1714, 1726.

48 Susan Rose-Ackerman, "Against Ad Hocery: A Comment on Michelman," *Columbia Law Review*, Vol. 88 (1988) pp. 1697, 1710.

49 See, for example, *Pennell v. City of San Jose* (1988) 485 U.S. 1, 99 L. Ed. 2d 1.

informed markets this discounted stream approaches the current market value. For example, if it is known that the market rate of interest will remain constant at 10 percent for the next decade, and if a risk free financial instrument exists which will pay exactly $1 per year for the next decade, that instrument is worth $6.14 today. That is the value of ten annual payments of $1 at a discount rate of 10 percent. Ignoring transactions costs, a person would be indifferent between selling the instrument for $6.14 or holding it for ten years. The certainty of the present value of this stream of revenue depends upon knowledge of three things: the amount of the payment ($1), the period (ten years) and the discount rate (10 percent). The more unpredictable any of these factors are, the less reliable will be the estimate of present value. As will be shown, application of the income method of valuation to highly volatile resource industries is fraught with difficulty.

Another issue that must be considered is the possibility of a partial taking. For example, imagine that a mill depends upon a certain amount of raw material to run at full capacity. Imagine further that supply of the raw material is reduced due to a taking, but that the mill can continue to operate, albeit at a reduced capacity. In effect a portion of the mill has been rendered redundant, and if capital is sunk (i.e., portions of the mill cannot be hived off and sold) this will result in a loss to the owner. The problem is exacerbated if there are substantial economies of scale (i.e., cost per unit drops substantially as output increases) because the reduced throughput will raise the per unit cost of all the remaining output. The implication is that the taking has created two indirect losses. First, the mill owner has lost the fixed assets which are permanently idled by the reduced supply of raw material. Second, per unit costs are higher for all units which continue to be produced. If the mill owner had been induced to construct a mill of a given capacity based upon promises of secure volumes of the raw material there may be grounds for compensation.[50]

THE PRACTICE

In the classical expropriation paradigm the principle of valuation is that the owner is entitled to be put in as good a position as though there had been no expropriation. The basic formula utilized by the *Expropriation Act* is that the owner is entitled to the "market value" of the estate or interest in land, plus damages for "disturbance" (section 30). The market value of an interest in land is defined as "the amount that would have

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50 The tentative conclusion with respect to compensability is due to uncertainty over the rationale for the original capacity decision. On the one hand government may have required the mill owner to construct a certain capacity to obtain entitlement to the raw material. On the other hand capacity might have been chosen to induce government to increase the allocation of the raw material. In the latter case full compensation might be seen as unfair by entrepreneurs who had foreseen the eventual reduction in raw material supply and downsized their mills accordingly.

been paid for it had it been sold at the date of expropriation in the open market by a willing seller to a willing buyer" (section 31). Disturbance damages include the costs of relocating and other losses that are directly attributable to the expropriation. Not all claims for compensation are made pursuant to the *Expropriation Act*. Other property compensation claims will be arbitrated or will proceed to court. Regardless of the forum, market value is the usual standard.

A number of methods are used to determine market value. The most common and reliable is simply to employ comparable sales. Where no comparable sales exist, the income method (discounted cash flow) or cost approaches may be utilized.

The preferred approach in expropriation cases is the comparables, or market data method. The problem with the application of this principle to resource interests is, of course, that there are few sales of comparable property and therefore no direct basis for the estimation of market value. Thus, so long as market value remains the standard of compensation, valuators must rely on the income, or discounted cash flow approach. This approach has, however, been the subject of adverse comment by numerous judges, academics and others.

Problems with the income approach: uncertainty and speculation

In order to ensure efficiency and fairness, compensation principles must be sufficiently certain and predictable that the parties, or an adjudicator, are able to apply them with some confidence. Certainty produces fairness and efficiency in that, ideally, the parties will be able to settle their dispute without resorting to formal mechanisms. In the event that the dispute proceeds to adjudication, the rules and principles must be sufficiently certain to produce accurate and consistent awards. The present state of the law is unsatisfactory from this point of view because determining the market value of resource interests often amounts to guesswork.

The income method of estimating the value of resource interests is subject to a number of serious problems. Most obviously, it is based on speculation about future costs, revenues, and other unforeseen events. In the case of timber interests, determining the stream of earnings requires the valuator to estimate future prices, production levels, costs of production, periodic adjustments to the annual allowable cut, risks of fire and pests, etc. In the *Gagetown Lumber* case[51] the court had to measure the value of a timber interest. Referring to "vital elements involved in exchange value," Justice Rand commented on the need to take into account:

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51 (1957) S.C.R. 44 (per Rand J. at S.C.R. p. 50, Locke J. at p. 62).

> the multiple risks of the future, risks of fire - of which there is significant evidence here, the infestation of pests, fungi, etc., market variations, changes in operating costs, seasonal conditions, the effect of competitive substitutes and other factors and uncertainties...

The valuation of mining interests is additionally complicated because the resource is under the ground. This was recognized in *Gordon v New Brunswick* where Stevenson J. explained, this was

> ...an unusal case in that we are not dealing with land, buildings or other property of which the value can be determined by reference to other sales or to replacement cost. The interest that was exproprited was the limited interest of the holders of the claims.[52]

After considering three expert valuations ranging from $45,000 to over $1 million, Stevenson J. awarded $75,000 to the claimant.

In *Cyprus Anvil Mining*[53] the British Columbia courts were called upon to value mining claims acquired by the company (for the purpose of fixing the value of shares of dissenting shareholders in a takeover). Nine valuators, using the discounted cash flow method, produced values ranging from negative $68 million to positive $48 million. The Chief Justice accepted the income methodology (in the absence of any other), but stated that:

> In a case of this kind one becomes a captive of a method of valuation. When one starts down the discounted cash flow path he cannot easily get off. In this case I had to consider and select at least twenty different components of a cash flow formula ranging from multi-sided items such as ore reserves (tonnage and grade for four different minerals), metallurgy for four minerals, mining plan, mining costs, discount rate and, most important, future metal prices, and many other items.[54]

In the Court of Appeal[55] the value of the shares was reduced because the methodology produced a figure that the court felt was too high. The court commented on

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52 (1989) 39 L.C.R. 289, p. 306; aff'd. (1990) 42 L.C.R. 12 (N.B.C.A.)

53 (1984) 54 B.C.L.R. 225.

54 *Ibid.* at 228.

55 (1987), 33 D.L.R. (4th) 641.

the speculative nature of the valuation exercise, expressing grave doubts about using the discounted cash flow method when there was no historical cash flow. Justice Lambert noted the "enormous differences that could grow from comparatively minor differences and assumptions with respect to metal prices, discount rates and other factors that had a highly leveraged effect in the calculations."[56] And later he said that the discounted cash flow method should be viewed with care where there is no historical cash flow because it is based entirely on assumptions. "A minor variation in assumptions about future metal prices, tonnage, metallurgy, mining plans or discount rates becomes magnified through the calculation into a gross distortion of the fair value."[57]

More recently the Supreme Court of Canada has commented again on the problems involved in valuing mining properties, even when those properties are fairly well developed. In *LAC Minerals Ltd. v. International Corona Resources Ltd.*[58] La Forest agreed with the trial judge who found that "no one could predict future gold prices, exchange rates or inflation with any certainty, or even on the balance of probabilities." Likewise he noted that "the property had not been fully explored and that further reserves may be found." La Forest also agreed with the Court of Appeal which had stated that:

> ...there is no question but that gold properties of significance are unique and rare. There are almost insurmountable difficulties in assessing the value of such a property in the open market... The profitability of the mine, and accordingly its value, will depend on the ore reserves of the mine, the future price of gold from time to time, which in turn depends upon the rate of exchange between the U.S. dollar and Canadian dollar, inflationary trends, together with myriad other matters, all of which are virtually impossible to predict.[59]

Cost-based alternatives:

Reference to other areas of the law demonstrate that "market value" based on discounted cash flow is not the only option for compensation. In ordinary commercial law, other methods have been developed. When a contract has been breached the usual principles of compensation require that the disappointed party be put in the position in which they would have been had the contract been performed. This "expectation

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56 *Ibid.* p. 648.

57 *Ibid.* p. 657.

58 (1989), 61 D.L.R. (4th) 14.

59 (1988) 44 D.L.R. (4th) 592 p. 651 (Ontario C.A.)

measure" of damages is similar to "market value" in expropriation law. In some cases, however, especially where the market value is uncertain or unwarranted, courts will rely on an alternate measure based on lost investment. This is called the "reliance measure" of damages, and is based on out-of-pocket costs. Indeed, when combined with rules limiting damages to amounts that are foreseeable, and requiring persons to mitigate any harm they suffer as a result of a breach of contract, the damages awarded in contract cases frequently amount to little more than out-of-pocket costs.[60]

The reliance measure of damages does not include lost profits, but is limited to an amount of damages designed to put the plaintiff in the position that existed prior to entering into the contract. Essentially, it includes only those expenses incurred by the plaintiff as a result of entering into the contract. It has been described as "unrecovered working capital" lost by reason of the breach.[61]

The reliance measure of damages is used in contract law when, for example, lost profits are too uncertain or speculative. As a matter of policy, it is a measure that might be preferred in situations where the lost profit method appears to confer a windfall upon the plaintiff, to unduly burden the defendant, or to generate measurement and settlement costs that are too high.

One example of the reliance approach is the case of *Esso Petroleum v Mardon*.[62] In this case, the plaintiff had leased a petrol station from Esso in reliance on the latter's estimate of the annual consumption of petrol (the E.A.C.). That estimate turned out to be vastly exaggerated because of the poor location of the petrol station's forecourt in relation to the main street. The English Court of Appeal held that there had been a breach of contract and a negligent misrepresentation, but it did not award the plaintiff his lost profits. Lord Denning held that it would be wrong to hold that Esso's estimate amounted to a guarantee of a certain volume of business and, therefore, a certain level of income. Instead, the court awarded the plaintiff the amount of his outlay wasted in reliance on Esso's estimate as well as reasonable earnings foregone as a result of entering the business.

Similarly, in the case of *McRae v. Comm[illegible]ealth Disposals Commission*[63], the defendant, a government agency, sold the plaintiff the salvage rights to a sunken tanker.

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60 See L. Fuller, "The Reliance Interest in Contract Damages," Yale Law Review vol. 46 (1936) 52; *Anglia T.V. v. Reed* [1972] 1 Q.B. 60 (C.A.).

61 *Sunshine Vacation Villas Ltd. v. Hudson's Bay* (1984), 58 B.C.L.R. 33 (C.A.).

62 [1976] 2 All E.R. 5 (C.A.).

63 (1951), 84 C.L.R. 377 (Aust. H.C.).

The tanker turned out not to exist and the plaintiff claimed its lost profits from the defendant. The Australian courts held that lost profits in this case were inappropriate because, among other things, they were too speculative. It awarded to the plaintiff the amounts that it had laid out and wasted in reliance on the salvage permit. It did not award the entire capital cost (e.g., improving its salvage vessel) on the basis that such capital investments had, in some respects, improved the value of the plaintiff's property and had not, therefore, been wasted.

Mining valuators in the United States do occasionally base their valuations on unrecovered capital, especially where the market value of the claim is particularly speculative. The approach has been referred to as the "exploration budget method" which essentially asks how much a prudent investor would budget for exploration. Reasonable past expenditures are used as the basis, though expenditures that have not produced positive results are excluded. Expenditures that have produced positive results are then brought forward using the consumer price index.[64]

Cost-based compensation and moral hazard

Reference has been made previously to the problem of moral hazard in respect of full compensation. Similar problems may arise in respect of cost based compensation in certain circumstances. One problem with cost based compensation is that it may result in over compensation in situations where the mining claim was valueless, or in which the anticipated revenues were clearly less than costs. To award compensation in such cases would appear to confer a windfall upon the claim holder. It would also reduce the ordinary risks of prospecting by providing some insurance against a "dry hole," and create an incentive to the holder to strive to have the interest expropriated.

This problem is recognized in contract law. Reliance damages are not awarded in cases where they exceed expectation damages (measured by lost profits). In such cases the courts reason that the loss of investment was not caused by the breach of contract. Instead, it was caused by the fact that the investment was not a profitable one in the first place. Such a limitation also ensures that parties to a "losing contract" do not seek to encourage "technical breaches" by the other party.

There is apparent recognition of this problem in the *Mineral Tenure Act*.[65] The Act provides for limited prospecting in recreational areas, but after 10 years any claims in these areas may be expropriated. There is discretion to award compensation, but the Act excludes compensation for expenses relating to acquisition, exploration and

64 Thomas A. Loucks, "The Valuation of Hard Rock Mineral Properties," *Rocky Mountain Mineral Law Institute*, vol. 36 (1990) 11-1.

65 S.B.C. 1988, c.5, section 19.

development of the claim. Similarly, when valuators in the United States assess the value of unproven mining claims on a cost basis, they exclude expenditures that have not produced positive results. And some American statutes expressly limit compensation to the lesser of "market value" or "cost." These regimes are discussed more fully in the Appendix A-1.

Lessons from elsewhere

The Commission has surveyed compensation regimes in other jurisdictions. While not exhaustive, several lessons can be drawn from this survey. While those contacted confirmed that the withdrawal and compensation issues were live ones in their jurisdictions, there is little actual experience on which to draw. There is certainly no single and comprehensive model for a compensation system. By and large, compensation is provided on an *ad hoc* basis, often the result of informal negotiations. Whether or not compensation is paid, and in what amount, is as much the product of the bargaining relationship between the parties as of any deliberate scheme.

When formal compensation systems exist, they differ from one another in both the definition of compensable interests and in the method of valuing the interest. The options vary from no compensation to full compensation for market value. First, government may reserve to itself, either through legislation or through contractual terms, the unfettered right to vary, reduce or terminate resource interests with no compensation. Second, the holder may be entitled to compensation, but the amount is ultimately determined at the discretion of a political authority. Third, the withdrawal issue may be anticipated at the time of entering into a resource contract, and the terms of the agreement may provide for some form of compensation. Finally, the relevant legislation may expressly state that compensation will be paid, and may also go on to specify the basis of valuation.

Where there is express provision for compensation, the two most common bases are market value and historical cost. Each is used in different jurisdictions with respect to both mineral and timber interests.

CONCLUSIONS: THE BASIS FOR COMPENSATION

While past experience provides no definitive answer to the valuation problem, some general conclusions emerge.

First, when market value is difficult to determine, there are sound theoretic and pragmatic reasons to use cost-based estimates. Further, there are sound reasons for not

using the income approach in cases involving resource industries. Too many of the variables required for the calculation are subject to sharp fluctuations.

Second, full compensation, whether based on market value, the income method, or past costs, will not solve the moral hazard problem. Introduction of a "deductible" (as is common with insurance policies) would help attenuate the problem.

Third, under some circumstances compensation policy should consider payments for indirect losses imposed on the owners of fixed capital. This might include situations where the withdrawal of rights to raw materials rendered processing facilities worthless, or imposed cost penalties associated with operation at sub-optimal capacity.

Fourth, there are sound theoretic grounds for not including economic profits (e.g., monopoly profits, resource rents and windfall gains) in the calculation of compensable losses.

PART FIVE

RESOURCE INTERESTS

The focus of the Commission's interest is on forest and mineral interests. The purpose of this part is to set out a description of existing private rights to forest and mineral resources on Crown lands. The descriptive analysis seeks to answer three broad questions: what is the relative importance of the specific interest; who holds the interest; and what rights and obligations does the interest convey?

Answers to the first two questions will indicate which types of interests are most likely to be the object of a taking and who the holders are most likely to be. The answer to the third question helps to locate specific interests on the spectrum between "full-blown" private property and something less. This issue warrants some elaboration.

Earlier in this report, property was defined as a bundle of sticks with each stick representing a particular right. The greater the bundle, the closer the interest comes to conveying "complete" property rights. While there are numerous ways to classify the component sticks (rights), a useful five part taxonomy includes; comprehensiveness, exclusiveness, duration, transferability, and benefits conferred.[1]

Comprehensiveness pertains to the scope of the interest holder's rights to the benefits generated by an asset. In the context of natural resources, a comprehensive property right would convey entitlements to all benefits, including timber, minerals, fossil fuels, water, and wildlife. Generally, private resource interests on Crown lands are far from comprehensive. For example, timber harvesting rights convey the right to timber and little more.

Exclusivity has to do with the interest holder's right to deny others benefits generated by the asset. Residential homeowners enjoy a high level of exclusivity in that they can literally prohibit others from trespassing on their property. Generally, private rights to public natural resources have a high degree of exclusivity with respect to the specific resource. The holder of a timber harvesting right can exclude others from logging the allocated timber, albeit the public retains the right to extract recreational and other benefits from the forest.

The duration of the right simply means the time period over which the holder may derive the benefits from the asset. Freehold entitles the owner to benefits in

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1 Peter Pearse, *Introduction to Forestry Economics*, (Vancouver: Univ. of British Columbia Press, 1990) Chapter 9.

perpetuity (assuming taxes and other levies are paid). Private resource interests on Crown lands are generally not perpetual, although many include the right to nearly automatic renewal or replacement.

Transferability involves the right of the holder to transfer the entitlement to another party through sale, donation, bequest or the like. Freehold property owners can generally convey their assets to others with few restrictions. Most of the resource interests under review are transferable, although for many, government approval is required and, for some, a portion of the entitlement is taken back by the Crown upon transfer.

The category of "benefits conferred" deals with the extent to which the rights holder can fully extract all benefits emanating from the asset. It is safe to say that even freehold title does not convey the right to all potential benefits from property because rules and regulations limit the unfettered use of all assets. Homeowners, for example, must conform to zoning and safety regulations which to varying degrees will reduce the benefits of ownership. For many private resource interests, the rights to benefits are narrowly bounded. This is particularly true for timber harvesting rights in that the Crown collects substantial sums for the timber, imposes costly obligations and applies significant restrictions.

In the following, this taxonomy will be applied to both forest and mineral interests. The analysis begins with the more complicated of the two.

TIMBER INTERESTS

The system of forest tenures in British Columbia is extremely complex, reflecting the accommodation of public policy to changing public and industrial needs. The current system encompasses a number of tenures. Some can be traced back to before the turn of the century, others were created within the last 15 years. Some are held by the original licencee, others have changed hands a number of times. Each form of tenure sets out different rights and obligations.

History and Relative Importance of the Tenures

A discussion of forest tenures should begin with an acknowledgement of the importance of public ownership of forest lands in Canada, and particularly in British Columbia, relative to other jurisdictions with significant forest based industries.

Table 5-1
Ownership of Commercial Forest Land Base[2]

Jurisdiction	Public	Private
Canada	91%	9%
British Columbia	96%	4%
Ontario	85%	15%
Quebec	88%	12%
Finland	28%	72%
Sweden	25%	75%
New Zealand	50%	50%
United States	28%	72%

The overwhelming ownership of the forests by the Crown has obvious ramifications for compensation policy. Private interests in timber harvesting in British Columbia are for the most part something less than outright ownership. Returning to the analogy of property rights as a bundle of sticks, private interests in Crown timber are missing some of the sticks which comprehend "complete" property rights. To understand the current array of tenures it is necessary to review, albeit briefly, the historical evolution of forest policy in British Columbia.

From the earliest European settlement up to the mid 1800s, harvesting rights were not an issue. The supply of available timber relative to demand was overwhelming and timber could be viewed as a free good. To the early settlers trying to establish farms, standing timber was probably more an impediment than an asset. In those early days land, and the timber on it, was sold or granted to private parties in the usual British manner. The grantee obtained freehold title to the land, everything on it, and in many instances, everything under it.

In the second half of the nineteenth century the process of alienation escalated. Substantial tracts of forest land were granted to the railroads to assist in their financing. Importantly, in 1865 the colonial Governor of Vancouver Island initiated a policy of allocating the rights to harvest timber on Crown lands without granting title to the land itself. This marked a watershed in forest policy as soon it became the preferred and predominant mechanism for allocating timber to private interests. Why this became the

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2 Sources: Forestry Canada, *The State of Forestry in Canada, 1991 Report to Parliament*, (Ottawa: Supply & Services Canada, 1992), and Council of Forest Industries, *British Columbia Forest Industry Fact Book - 1991*, (Vancouver: COFI, 1992) p. 38.

preferred policy is not altogether clear. Peter Pearse argues that it was motivated by dual, contradictory perceptions.

> In the early years of this century the Conservation Movement became a major political force in the United States and its influence spilled over into Canada. It was a reaction to the alienation of vast tracts of land and resources in the western states, the railroad robber barons who were acquiring and exploiting them, and the fear that these resources were being depleted too fast, to the detriment of future generations. There was a contradictory fear that alienated resources would fall into the hands of speculators who would hold them off the market to the detriment of immediate development.[3]

By 1906 the alienation of land which was most valued in forest use was prohibited by statute in British Columbia. At that time a substantial amount of timber had been allocated to private interests either through Crown grants (i.e., fee simple title) or through a number of early harvesting licences which collectively came to be called old temporary tenures (OTTs).[4] In fact, the introduction of one of these OTTs with extended terms in combination with external factors (e.g., exhaustion of eastern pine forests, construction of the Panama Canal), triggered a timber "rush" which increased the number of licences from 1,500 to 15,000 within a two year period.[5] The government of the day, undoubtedly alarmed by the large tracts of forest land which were being committed, suspended further licensing and established a Royal Commission of Inquiry into the state of provincial forest resources.

Chaired by F.J. Fulton, the Commission reported in 1912 that enough timber had been allocated to sustain industrial forest development into the foreseeable future. It recommended that further allocations be limited to small tracts needed to rationalize logging operations. This was accomplished with the initiation of Timber Sale Licences. With time and increased demand for timber, these minor licences became increasingly important and by 1945 accounted for 25 percent of the provincial timber harvest.

By the mid 1940s the system was proving inadequate. Industry demand for timber was pressing upon the limits of existing allocations, and the increasing size of processing facilities, particularly pulp and paper mills, required larger, more secure

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3 Peter Pearse, "Property Rights and Natural Resource Policies," *Canadian Public Policy*, 1988, XIV no 3, p. 310.

4 These included Pulp Licences, Pulp Leases, Timber Berths, Timber Leases and Timber Licences.

5 Task Force on Crown Timber Disposal, *Crown Charges for Early Timber Rights* (Victoria: Queen's Printer, 1974) pp. 53-67.

supplies of raw material. At the same time it had become obvious that forest management (e.g., reforestation) was deficient in the province. These issues were addressed by a second Royal Commission headed by the Honorable G. Sloan. The important recommendations of this Commission were implemented and had a profound effect on forest policy.

The Commission envisaged a division of the forests into private working circles and public working circles. The private working circles were to be allocated to major timber processors. They would have long-term, exclusive rights to harvest specified tracts of forest, and would have the responsibility to practice sustained yield management on those lands. In order to induce the forest companies to commit their fee simple lands and old temporary tenures to sustained yield management, the government offered expansive areas of as yet unencumbered Crown forests for inclusion in the private working circle. These tenures came to be called Tree Farm Licences (TFLs). They are comprised of "Schedule A" lands which include Crown grants and old temporary tenures, and the Crown's contribution, known as "Schedule B" lands. The "A" lands retain their original Crown charges. The "B" lands are stumpage bearing. In effect, the forest companies gave up harvesting flexibility (in terms of volume and timing) on their "A" lands in exchange for control over "B" lands. In 1975, approximately 13 percent of the productive lands in Tree Farm Licences were "A" lands. The remaining 87 percent were "B" lands which represent the Crown's contribution to this tenure type.[6] Of the 1990-91 harvest from the TFLs, 21 percent came from the "A" lands and 79 percent from the "B" lands. Currently the TFLs account for 25 percent of the allowable cut in the forests managed under sustained yield (also known as the regulated harvest).[7]

The public working circles, later to become Public Sustained Yield Units (PSYUs), were intended to provide logging opportunities for small operators who were unwilling or unable to assume forest management responsibilities. Allocation of wood in the PSYUs was to be done through competitive bidding, and the Crown was to perform the management duties. However, access to the PSYUs for all who were willing and able to pay the going price narrowed with time. By 1973 the PSYUs accounted for 60 percent of the provincial forest lands and half the harvest. At that time, a form of tenure introduced in 1967 called the Timber Sale Harvesting Licence accounted for nearly 60 percent of the cut within the PSYUs. These licences usually ran for 10 years, conferred the right to cut a volume (not an area) of timber, carried significant management responsibilities, and, by virtue of Forest Service practices were renewable. In effect, licence holders were recognized as having a "quota position" in the relevant PSYU. If

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6 Peter Pearse, *Timber Rights and Forest Policy in British Columbia*, vol. 1 (Victoria: Queen's Printer, 1976) p. 31.

7 See Table 5-2.

cutting rights were fully committed within the PSYU, the Forest Service gave preferential treatment to quota holders upon expiration of their licences.

Forest policy underwent another, very thorough review in the mid 1970s. The Royal Commission on Forest Resources (the Pearse Commission) was directed to review the system of timber allocation and make recommendations to ensure that a broad range of public policy goals would be met. Major concerns at the time included: increasingly entrenched, albeit ambiguous, harvesting rights in the PSYUs; increasing concentration of harvesting rights province wide; inability of the Forest Service to fulfill management requirements in the PSYUs; and inconsistencies in the terms of the TFLs, with resultant uncertainties over the rights and obligations of the holders. The Pearse Commission made numerous recommendations to address these issues, many of which were acted upon by the legislature. Important amongst these were policies to harmonize the terms of the TFLs, formal recognition of the quota system in the PSYUs, and provisions to ensure access to timber for smaller, unintegrated operators.

The *Forest Act* of 1978 resolved the uncertainty surrounding informal quota positions in the PSYUs (subsequently rearranged into Timber Supply Areas or TSAs) by establishing a new form of harvesting right, the Forest Licence (FL). These licences replaced quota rights and conferred on the licencees stronger entitlements and greater management responsibilities than had ever been envisaged by the creators of the original public working circles. At present the FLs account for 56 percent of the provincial allowable cut, and about three-quarters of the allowable cut within the TSAs.

The *Forest Act* of 1978 also provides for timber allocation to smaller operators through the creation of specific licences for operators who qualify under the Small Business Forest Enterprise Program (SBFEP).[8] Under the terms of this program, a portion of the allowable cut is allocated by competitive bid to operators who qualify as small businesses. Initially "non-quota" wood in the old PSYUs was directed to this program. In 1988 the volume available for this program was increased through a reduction in the allocations to other licencees. The *Forest Amendment Act* reduced the annual allowable cut of replaceable Forest Licences, replaceable Timber Sale Licences and replaceable Tree Farm Licences by 5 percent (without compensation). This volume was allotted to the SBFEP. In the 1990-91 fiscal year, these tenures represented 13 percent of the allowable cut.

The evolution of forest tenure policy has resulted in three main types of harvesting rights; Tree Farm Licences, Forest Licences and Timber Sale Licences allocated under the Small Business Forest Enterprise Program. In the 1990-91 reporting

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8 This was initially known as the Small Business Enterprise Program. The name change came with policy revisions in 1987.

year, these licences accounted for 94 percent of the annual allowable cut on lands managed under sustained yield and 83 percent of the harvest.

Table 5-2

Forest Tenure Types:
Number, Annual Allowable Cut, and Billed Harvest
(1990-1991 reporting year)[9]

TENURE	#	AAC ('000m^3)	%	HARVEST ('000m^3)	%
Regulated Harvest					
Tree Farm Licence	33	18,284	25%	16,270	22%
of which					
Timber Licence				3,006	4%
Schedule B				12,834	17%
Crown Grants				430	<1%
Forest Licence	200	41,957	56%	38,507	52%
of which					
Replaceable	173	37,914	50%		
Non-replaceable	27	4,043	5%		
Timber Sale Licences					
SBFEP	1,393	9,358	13%	7,045	9%
Major	162	1,351	2%	1,094	1%
Pulpwood Agreement	4	1,624	2%		
Other		1,468	2%	1,552	2%
Woodlot Licence	478	404	<1%	383	<1%
Unregulated Harvest					
Timber Licence				2,487	3%
Private Land (Crown grant)				6,781	9%

9 Source: British Columbia Ministry of Forests, *Annual Report, 1990-91*, various tables. Percentages may not sum due to rounding. The cut listed for TFL (major) includes the cut from all TSLs not under the SFFEP.

Ownership Distribution of the Tenures

While there are over 2,000 harvesting tenures outstanding, they are not widely distributed. In fact, committed AAC in the two most important tenures, Tree Farm Licences and Forest Licences, is highly concentrated. The data are arrayed in Tables 5-3, 5-4 and 5-5, and are largely self explanatory. It should be noted that the largest groups also hold most of the unregulated forest (TLs and private land outside of TFLs).

Table 5-3

Holdings by Ownership Group[10]
Committed AAC within TFLs and TSAs (1992): Province

Group	AAC ('000m^3)	Percent	Percent (cumulative)
Noranda	10,099	13.9%	
Fletcher Challenge	6,812	9.4%	
Canfor	4,945	6.8%	
West Fraser	4,386	6.0%	
Weldwood	3,247	4.5%	40.6%
Next 5		18.3%	58.9%

Table 5-4

Holdings by Ownership Group
Committed AAC within TFLs and TSAs (1992): Coast

Group	AAC ('000m^3)	Percent	Percent (cumulative)
Noranda	6,469	27.7%	
Int'l Forest Prod.	2,921	12.5%	
Doman	2,758	11.8%	
Fletcher Challenge	2,319	9.9%	
C.P. Ltd.	1,892	8.1%	70.2%
Next 5		17.2%	87.4%

10 Ownership data for this and following tables supplied by Timber Harvesting Branch, Ministry of Forests.

Table 5-5

Holdings by Ownership Group
Committed AAC within TFLs and TSAs (1992): Interior

Group	AAC ('000m^3)	Percent	Percent (cumulative)
Fletcher Challenge	4,493	9.1%	
West Fraser	3.724	7.5%	
Noranda	3,630	7.3%	
Canfor	3,486	7.0%	
Slocan	3,006	6.1%	37.1%
Next 5		18.5%	55.6%

THE BUNDLE OF RIGHTS: FOREST TENURES[11]

All the timber harvesting tenures share three entitlement characteristics. First, with respect to comprehensiveness, all restrict the holder to the harvesting of timber. Rights to other resources on Crown lands are not conveyed. In fact, the holder is obliged to respect these other sources of benefits when harvesting. Protection of waterways and fish habitat are cases in point. Second, all convey exclusive rights. Once timber is allocated to a licencee, there is no competition for the resource. Third, all timber harvested from Crown lands must be processed to some extent within the province. Raw logs and wood residues originating from timber on these lands may be exported only with government permission. In the other dimensions which define property (such as duration, transferability and benefits conferred) there is considerable variation between the different tenure forms. These must be addressed on a tenure by tenure basis.

Tree Farm Licences

As noted in the general description of forest policy evolution, the TFLs are comprised of "Schedule A" lands and "Schedule B lands." "A" lands include private lands and Timber Licences. "B" lands are simply Crown lands. All lands within the TFL

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11 This section draws from: David Haley and Martin K. Luckert, *Forest Tenures in Canada: A Framework for Policy Analysis* (Ottawa: Supply and Services Canada, 1990); *Forest Act* (R.S.B.C.); Peter Pearse, "Forest Policy in Canada," Forest Economics and Policy Analysis Project, Univ. of British Columbia, 1987, mimeo; British Columbia, Ministry of Forests, *Annual Report*, various years; Province of British Columbia, "Response to Countervailing Duty Questionnaire, Certain Softwood Lumber Products from Canada (Inv. C-122-816), December 13, 1991, mimeo; Province of British Columbia, "Response to Supplemental/Deficiency Questionnaire, Certain Softwood Lumber Products from Canada (Inv. C-122-816), January 9, 1992, mimeo.

are subject to sustained yield management and thus an annual allowable cut. The "A" lands have retained several of their original characteristics, especially Crown charges. The TFLs are area based and give the right to harvest upon specific lands. They do not confer rights to other resources.

-Security: TFLs have a term of 25 years. The licencee may apply for a replacement licence of 25 years to begin on the tenth anniversary of the exisiting licence. It is important to note that this is a replacement and not a renewal. The replacement can contain new terms and conditions. If these are acceptable to the licencee, the existing licence is surrendered and the replacement comes into force. If the terms of the replacement are not acceptable, the existing licence remains in force until expiry, at which time the Crown has no obligation to offer a replacement. The advantages of the replacement ("evergreen") conditions are that terms can be revised every decade, and the licencee avoids uncertainty by being able to renew well before the expiration date.

Up to 5 percent of the AAC of a TFL may be taken without compensation during each deletion period (each successive 25 year period from the issuance of the licence) if lands are withdrawn for alternate uses (e.g., parks).[12] The status of the TFLs with respect to "time to end of deletion period" is set out in Table 5-6.

Table 5-6
Time to End of Deletion Period: Tree Farm Licences
(as of April 1992)[13]

Time to End of Deletion Period (years)	AAC ('000m^3)	Percent of AAC	# Licences	Percent of Licences
0 - 5	-	-	0	0
5 - 10	-	-	0	0
10 - 15	10,069	55.0%	16	47.1%
15 - 20	6,092	33.3%	11	32.4%
20 - 25	2,161	11.8	7	20.6%

12 There is some uncertainty over the maximum amount which may be deleted without compensation. According to some interpretations section 53 of the *Forest Act* allows for a 5 percent deletion for highway, pipeline and similar rights of way and an additional 5 percent for other purposes. For the remainder of this report a single 5 percent figure is assumed, albeit the uncertainty is acknowledged.

13 Data on deletion periods for this and following tables were provided by Timber Services Branch, Ministry of Forests. There are minor inconsistencies between the deletion period tables and Table 5-2 due to different reporting dates.

-Transferability: The transfer of a TFL requires ministerial consent. If there is an appurtenant mill (explained below), which is generally the case, the mill and harvesting licence cannot be sold separately. When a TFL is transferred, 5 percent of the AAC attributable to "B" lands and held by the licencee is taken by the Crown. Overall, about 6 percent of the "B" lands in TFLs are allocated under the Small Business Forest Enterprise Program.

-Crown Charges: Upon harvest, stumpage is applied to "Schedule B" lands, and royalties are applied to Timber Licences within the TFL. "Schedule B" lands are subject to a ground rent of $\$.45/m^3$ of standing timber. Rent on Timber Licences within the TFL is $1.25/hectare. Private forest lands, regardless of whether they are in a TFL, are subject to property taxes.

-Obligations: The licencee must prepare a Management and Working Plan at least once every five years. The Plan sets out a broad strategy to manage the forest lands. It contains an inventory of available resources, identifies utilization standards, sets AAC levels, includes protection measures (fire, insects, disease control), and provides for accommodation of non-timber resource values. The licencee must also prepare a Five-Year Development Plan, updated annually, showing details of the location and sequence of harvesting. Both plans are subject to approval by the Chief Forester. The licencee must provide for basic access to timber although upgrading of roads is payable by the Crown. The licencee is required to perform and pay for basic silviculture which includes reforestation and restoration of logged sites. With several exceptions, the TFLs require the licencee to operate a facility to process wood harvested under the licence. This is known as a mill appurtenancy clause or requirement.

-Restrictions: A cut control applies to TFLs. The licencee must harvest within plus and minus 50 percent of the AAC annually (i.e., between 50 and 150 percent of the AAC), and within plus and minus 10 percent over a five year period. Timber must be processed in the province and 50 percent of the annual volume from "Schedule B" lands within the licence must be harvested by independent contractors.

Timber Licences

This tenure consolidates the several long-standing tenures which were collectively referred to as old temporary tenures or OTTs. Timber Licences were issued as replacements for the former OTTs, and reside over timber both within and outside TFLs. There is no specific harvest volume designated by such tenures. The tenures convey the right to harvest the standing timber over a specified area and expire when the timber is harvested. Once harvested, TLs within TFLs are rescheduled as "B" lands, while TLs outside TFLs simply revert to the Crown. TLs remain a significant, though declining

source of timber harvest, accounting for 5,493,000 m^3, or 7.4 percent of the total 1990-91 billed harvest. Slightly over half that volume came from areas within TFLs.

-Security: Timber Licences have no fixed duration period, and expire when the timber is removed. They are not replaceable, although there is provision for extension. TLs within TFLs expire when the TFL expires. Each licence specifies a term over which it is anticipated that the timber would be removed. TLs are subject to a 5 percent area reduction, without compensation, during the term of the licence.

-Transferability: Timber Licences are transferable with Ministerial consent, subject to a takeback of 5 percent of the "value of the timber". The definition of value in this regard remains unclear.

-Crown Charges: At the time Timber Licences replaced the OTTS, holders were given the option of paying either stumpage or royalty on the timber harvest. Nearly all elected to pay royalties, fixed and adjusted periodically by statute. The current royalty payable upon harvest is on average \$5.40 /m^3. Annual rent of \$1.25/hectare also applies to the TLs.

-Obligations: Timber Licences within TFLs are subject to all of the operational stipulations and controls associated with forest management, harvest and post-harvest reforestation which apply to the TFL. TL holders are required to pay for road building, forest protection and reforestation after harvest.

-Restrictions: TL holders are required to harvest in accordance with normal forestry practices (i.e., they must have regard for non-timber values). Importantly, TLs outside of TFLs are not subject to cut controls. The licence holder may choose to harvest the timber when it is most advantageous and is not bound by annual minimums and maximums.

Forest Licence

Forest Licences are the most significant forest tenure, accounting for 52 percent of the billed harvest in 1991. The majority of Forest Licences were issued as replacements for former Timber Sale Harvesting Licences (TSHLs). New Forest Licences are also issued by competition. Forest Licences provide the right to harvest a specified volume of timber each year within a given Timber Supply Area.

-Security: Forest Licences are normally issued for a term of 15 years. New licences may be issued for up to 20 years to facilitate the establishment of a new processing facility. Like the TFLs, Forest Licences are replaceable, not renewable. Replaceable FLs account

for 90 percent of the committed timber volume under this tenure. Replacement occurs on the fifth anniversary of the original licence to a maximum term of 15 years. Thus "evergreen" security is achieved with the FLs, although the terms of the licence may be changed at the time of replacement (in fact a replacement licence may call for no further replacements). The holder may elect to maintain the original licence (and terms) in which case the licence becomes non-replaceable and expires at the end of its original term.

Up to 5 percent of the AAC can be withdrawn from replaceable FLs without compensation during each deletion period (in the case of FLs, each successive 15 year period from the issuance of the original licence). A distribution of the time to the end of the current deletion period for Forest Licences is shown below.

Table 5-7
Time to End of Deletion Period: Forest Licences
(as of April 1992)

Time to End of Deletion Period (years)	AAC ('000m^3)	Percent of AAC	# Licences	Percent of Licences
0 - 5	-	-	0	0
5- 10	36,828	95.9%	157	94.6%
10 - 15	1,563	4.1%-	9	5.4%

-Transferability: Forest Licenses are transferable, subject to Ministerial consent and a takeback of 5 percent of the AAC where the licence is replaceable. If the licence stipulates the operation of a processing facility (i.e., an appurtenancy clause), transfer of the harvesting rights cannot be severed from the facility.

-Crown Charges: Stumpage applies to timber harvested under a Forest Licence. For the minority of new licences allocated by competition, bonus offers are usually sought and may therefore be paid in addition to stumpage.[14] Annual rental charges for this volume-based tenure are set by regulation and are currently $.25/$m^3$ of AAC.

-Obligations: Forest Licencees are required to submit management and five year development plans similar to those required of TFL holders. They must undertake basic silviculture and implement forest protection measures at their own expense. Basic road

14 The bonus offer is a lump sum payment offered by the bidder. It is in addition to stumpage.

construction is also assumed by the licensee. Forest Licences usually require the holder to operate a processing facility. The licence may also specify that a certain portion of the harvest be logged by independent contractors. In a few instances licencees operating sawmills must, if directed, give right of first refusal to designated buyers of residuals (primarily wood chips for pulping).

-Restrictions: A cut control similar to TFLs applies to Forest Licences: the licensee must harvest within plus and minus 50 percent of the AAC each year, and to within plus or minus 10 percent over a five year period.

Timber Sale Licences

Timber Sale Licences are a long-established form of harvesting licence dating back to the *Forest Act* of 1912. There are two principal types of TSLs: "Major" and "Small Business Forest Enterprise Program" (SBFEP). Each is described separately below. The SBFEP category accounts for by far the largest portion of the AAC held under TSLs (see Table 5-2).

Timber Sale Licence: SBFEP

Timber Sale Licences awarded under the SBFEP are intended to provide small businesses new access to timber and to encourage production of specialty products. This tenure is available only to registrants under the program. There are two categories of eligibility. Registrants in "Category 1" must not own or lease a timber processing facility. "Category 2" registrants must own or lease a processing facility. In both cases, registrants must not hold a Pulpwood Agreement or other forest tenures with a combined AAC greater than 10,000 m^3. TSLs (SBFEP) convey the right to harvest all timber on a particular tract.

-Security: Tenure is normally provided for a one to two year duration with the potential for extension; there is provision for tenure up to ten years.

-Transferability: The tenure is transferable with Ministerial consent. Where there is a requirement for a processing facility, the licence cannot be sold separately.

-Crown Charges: Stumpage is payable on SBFEP harvested timber. The reserve, or upset stumpage rate includes stumpage as calculated for other tenures plus development and basic silvicultural levies. These levies reflect costs borne by the Crown, which in the case of other tenures, are assumed by the licencee. Since SBFEP tenures are typically offered by competition, bonus bids are sought in addition to the upset stumpage. Annual rent is payable on this area-based tenure. The current rate is $1.25/hectare.

-Obligations: Since SBFEP licencees are small tenure holders, forest management and silvicultural obligations are assumed mainly by the Crown. Licencees have limited forest protection responsibilities (e.g., fire prevention). Expenses for basic road building on the cut block are assumed by the licencee.

-Restrictions: Depending upon whether the licencee is a "Category 1" or "Category 2" SBFEP registrant, there is either a requirement (respectively) not to operate, or to operate a processing facility.

Timber Sale Licence: Major

Major TSLs are much like Forest Licences, typically with a smaller AAC, and sometimes without the management responsibilities of forest licences. They are volume-based licences within Timber Supply Areas, and are often issued in special circumstances, for example to harvest damaged timber.

-Security: Major TSLs have a maximum duration of ten years. Newer licences are typically issued for a term from three to ten years and are not replaceable. Of the 1,306,000 m^3 committed volume, 336,608 m^3 is committed under replaceable terms; the balance is non-replaceable. Up to 5 percent of the AAC of replaceable licences may be withdrawn from any licencee within the deletion period (i.e., the term of the licence) without compensation. Currently all of the replaceable TSLs are within 5 years of the end of their deletion periods.

-Transferability: Major Timber Sale Licenses are transferable, subject to Ministerial consent and a takeback of 5 percent of the AAC where the licence is replaceable. Where a mill appurtenancy requirement exists, the licence cannot be transferred separately.

-Crown Charges: Stumpage applies to these tenures. For new licences issued by competition, bonus offers are sought and may be paid in addition to stumpage. Annual rental charges for this volume-based tenure are set by regulation and are currently \$.10/m^3 of AAC.

-Obligations: Licensees are required to submit management and working plans, but further approval of cutting plans may not be required. Basic silviculture and forest protection measures, and reforestation may or may not be required of licencees. Necessary road construction is assumed by the licensee.

-Restrictions: The licensee must harvest within plus and minus 10 percent over five years. Licencees generally cannot "carry forward" any volume uncut after five years.

Pulpwood Agreements

Pulpwood Agreements differ fundamentally from other tenures. In the early 1960s the majority of the AAC in Public Sustained Yield Units of the interior of the province was committed to sawmills. It was recognized that sawmill residuals, such as wood chips and sawdust (much of which was being burned at the time), could provide the input for pulp mills. However, pulp makers required a secure fibre supply before making significant investments in pulp mills. To this end, Pulpwood Harvesting Area Agreements (now called Pulpwood Agreements) were superimposed on extant harvesting rights. These agreements allow holders to harvest roundwood if the supply of sawmill residuals falls short of their needs. Currently each Pulpwood Agreement sets out a geographic area from which the mill can economically draw its fibre requirements. If the mill is unable to satisfy its requirements, specified in the agreement, with purchases of residuals from area sawmills, the agreement is invoked. The Crown then has a duty to issue TSLs sufficient to satisfy the input shortfall. To the processor, the agreement insures access to a fibre supply of last resort. There are currently ten Pulpwood Agreements in place.

The TSL is the vehicle by which the holder of a Pulpwood Agreement gets access to roundwood. These TSLs are area-based, and cover pulpwood quality timber stands. In reality, agreement holders rarely exercise their right to harvest roundwood. Currently the Ministry expects that four Pulpwood Agreement holders will need to exercise their rights to harvest.

-Security: Pulpwood Agreements are entered into for a period of 25 years, and may provide for replacement on the tenth anniversary of the existing agreement. TSLs issued pursuant to Pulpwood Agreements are of varying terms and are not replaceable.

-Transferability: Pulpwood Agreements are transferable (with the appurtenant processing facility) with Ministerial consent.

-Benefits Conferred: For the most part the fibre requirements of Pulpwood Agreement holders are satisfied with sawmill residuals. On rare occassions they must resort to harvesting under a TSL. These TSLs carry charges and restrictions similar to the other TSLs (major).

Woodlot Licences

Woodlot licences are small scale versions of TFLs. They are designed to promote long-term, small scale forestry on Crown land, and to encourage forest management on private land. They are area based and allow the holder to combine Crown land with private land in a forest unit. The licence is limited to a maximum of 400 hectares of Crown land which, when feasible, can be combined with adjacent private forest land.

There are currently 478 licensees accounting for a total volume commitment of 404,000 m^3 (just over one half percent of the provincial total.)

-Security: Woodlot licences are issued to a maximum term of 15 years, with provision for replacement after 5 years to the original term. Up to 5 percent of the AAC of the Crown lands may be withdrawn from any licencee within the deletion period (each fifteen year period from the commencement of the licence) without compensation.

-Transferability: Woodlot licences are transferable with Ministerial consent and are exempt from any takeback by the Crown.

-Crown Charges: Stumpage is payable on Crown timber harvested from a woodlot licence. Bonus payments are possible where new Woodlot Licences are issued by competition. Annual rent is currently set at \$.25 /m^3 of the annual allowable cut established for the tenure.

-Obligations: The licencee must manage the woodlot tenure, along with any private lands which are incorporated into the forest unit in accordance with approved management and working plans. Cutting permits are required for harvesting. Licencees are also responsible for road construction, forest protection, enhancement and reforestation measures. Cut control is to within plus or minus 10 percent of the AAC over a five year period.

-Restrictions: Woodlot licencees may not possess a processing facility and are limited to holding 400 hectares of Crown land.

Licences to Cut

Licences to Cut are area-based tenures which authorize timber clearing in circumstances where the purchaser or occupier of Crown land does not otherwise have timber rights. The licence dictates utilization standards and other harvesting practices. The licence provides for either stumpage or royalty payments. In 1990/91 these licences accounted for 702,000 m^3 (almost 1 percent of the provincial total).

Free-Use Permits

This tenure is limited in area to a maximum of 65 hectares. It is available only to applicants who do not otherwise have access to timber, and who will use the timber for agricultural purposes, firewood, personal domestic use, school board use, for conducting scientific investigation, or for on-site development of a mineral claim. No Crown charges are payable.

Road Permits

Road permits convey the right to harvest timber on a right of way on Crown land where a person has the right to harvest other timber not otherwise accessible. Timber harvested and not used in construction of the road or bridges is subject to stumpage or royalty charges. Road permits are an area-specific tenure and contain provisions governing logging practices.

Christmas Tree Permits

As the name suggests, this tenure authorizes the holder to grow and harvest Christmas trees on Crown land. This area-based tenure specifies an annual allowable cut, and a cut control of not less than 50 percent nor more than 100 percent of AAC in a given year. Stumpage is payable on the harvest at rates prescribed by regulation.

SUMMARY: FOREST TENURES

The rights conferred by the more important forest tenures are summarized in Table 5-8. It is evident that these tenures fall along the spectrum of "property." They vary considerably in terms of the primary rights which collectively constitute property.

Table 5-8

Characteristics of Timber Harvesting Rights

	TREE FARM LICENCE (TFL)	TIMBER LICENCE (TL)	FOREST LICENCE (FL)	TIMBER SALE LICENCE (TSL) Major	TSL SBFEP	PULPWOOD AGREEMENT	WOODLOT
COMPREHENSIVENESS							
Timber only	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Allotment type	Area	Area	Volume	Volume	Area	Commitment	Area
SECURITY							
Duration: Initial Term	25 years	Until timber removed	Normally 15 yrs.	Up to 10 years	Normally 1-2 yrs; 10 yr maximum	Up to 25 yrs	up to 15 yrs
Duration: Replacement	Evergreen	No	Evergreen	Sometimes		Evergreen	Evergreen
Deletion Conditions	Yes	No	Yes	Yes	No	N/A	Yes
TRANSFERABILITY							
Permitted with Ministerial Consent	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Takeback at time of Transfer	Yes	Yes	Yes, if replaceable	Yes, if replaceable	No	N/A	No
BENEFIT CONFERRED							
Crown Charge: Stumpage	On "B" Lands	No	Yes	Yes	Yes	N/A	Yes
Crown Charge: Royalty	On TLs	Yes	No	No	No	N/A	No
Crown Charge: Rental Fee	Yes	Yes	Yes	Yes	Yes	N/A	Yes
Crown Charge: Bonus	No	No	On new licence	On new licence	Yes	N/A	Possible
Obligations: Forest Protection	Yes	Yes	Yes	Yes	Limited	N/A	Yes
Obligations: Reforestation	Yes	Yes	Yes	Yes	No	N/A	Yes
Obligations: Appurtenant Mill	Usually	Usually	Usually	Usually	Rarely	N/A	No
Restrictions: Cut Control	+/-50% AAC annually +/-10%/5yrs	N/A	+/-50% AAC annually +/-10%/5yrs	+/-10%/5 yrs	N/A	N/A	+/-10%/5 yrs
Restrictions: Log Exports	Yes	Yes	Yes	Yes	Yes	N/A	Yes
Restrictions: Residual Exports	Yes	Yes	Yes	Yes	Yes	N/A	Yes
Restrictions: Contractor Clause	Yes	No	Usually	No	No	N/A	No

Road Permits

Road permits convey the right to harvest timber on a right of way on Crown land where a person has the right to harvest other timber not otherwise accessible. Timber harvested and not used in construction of the road or bridges is subject to stumpage or royalty charges. Road permits are an area-specific tenure and contain provisions governing logging practices.

Christmas Tree Permits

As the name suggests, this tenure authorizes the holder to grow and harvest Christmas trees on Crown land. This area-based tenure specifies an annual allowable cut, and a cut control of not less than 50 percent nor more than 100 percent of AAC in a given year. Stumpage is payable on the harvest at rates prescribed by regulation.

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The rights conferred by the more important forest tenures are summarized in Table 5-8. It is evident that these tenures fall along the spectrum of "property." They vary considerably in terms of the primary rights which collectively constitute property.

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Characteristics of Timber Harvesting Rights

	TREE FARM LICENCE (TFL)	TIMBER LICENCE (TL)	FOREST LICENCE (FL)	TIMBER SALE LICENCE (TSL) Major	TSL SBFEP	PULPWOOD AGREEMENT	WOODLOT
COMPREHENSIVENESS							
Timber only	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Allotment type	Area	Area	Volume	Volume	Area	Commitment	Area
SECURITY							
Duration: Initial Term	25 years	Until timber removed	Normally 15 yrs.	Up to 10 years	Normally 1-2 yrs; 10 yr maximum	Up to 25 yrs	up to 15 yrs
Duration: Replacement	Evergreen	No	Evergreen	Sometimes		Evergreen	Evergreen
Deletion Conditions	Yes	No	Yes	Yes	No	N/A	Yes
TRANSFERABILITY							
Permitted with Ministerial Consent	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Takeback at time of Transfer	Yes	Yes	Yes, if replaceable	Yes, if replaceable	No	N/A	No
BENEFIT CONFERRED							
Crown Charge: Stumpage	On "B" Lands	No	Yes	Yes	Yes	N/A	Yes
Crown Charge: Royalty	On TLs	Yes	No	No	No	N/A	No
Crown Charge: Rental Fee	Yes	Yes	Yes	Yes	Yes	N/A	Yes
Crown Charge: Bonus	No	No	On new licence	On new licence	Yes	N/A	Possible
Obligations: Forest Protection	Yes	Yes	Yes	Yes	Limited	N/A	Yes
Obligations: Reforestation	Yes	Yes	Yes	Yes	No	N/A	Yes
Obligations: Appurtenant Mill	Usually	Usually	Usually	Usually	Rarely	N/A	No
Restrictions: Cut Control	+/-50% AAC annually +/-10%/5yrs	N/A	+/-50% AAC annually +/-10%/5yrs	+/-10%/5 yrs	N/A	N/A	+/-10%/5 yrs
Restrictions: Log Exports	Yes	Yes	Yes	Yes	Yes	N/A	Yes
Restrictions: Residual Exports	Yes	Yes	Yes	Yes	Yes	N/A	Yes
Restrictions: Contractor Clause	Yes	No	Usually	No	No	N/A	No

MINERAL INTERESTS

The system of rights to mineral resources is refreshingly simple when compared to forest tenure arrangements, although it too has experienced evolutionary change.

History and Relative Importance of the Titles

Early mining legislation focused primarily on a single mineral, gold. However, as technology changed, mining interests shifted their focus to different types of mineral deposits and provincial mining legislation adapted accordingly. Current policy reflects many of the basic principles found in early Royal Proclamations. The first British Columbia statute dealing with mining claims was enacted in response to an influx of placer gold miners who had come to work the Fraser River gravel bars in the mid-1800s. In the absence of formal laws, these miners had implemented an informal set of rules to assign property rights over placer claims. There was an obvious need for legislated rules.

> In 1858, Sir C.B. Lytton, Colonial Secretary, suggested to Governor Douglas that he establish regulations governing mining and sent him a copy of Australian regulations. On August 31, 1859, Douglas proclaimed the *Gold Fields Act* and on September 7, 1859, *Rules and Regulations for the Working of Gold Mines*.[15]

The *Gold Fields Act* of 1859, based on Australian and New Zealand mining laws, established a system of Gold Commissioners who were authorized to record the staking activities of placer miners. The term "Free Miner" comes from the fact that these miners were granted the right to enter and occupy Crown lands for the purpose of mining and to be free of any land taxes.

Initially the size of claims was set at 100 feet by 100 feet which was adequate for simple placer mining. However, by the 1880s mining operations had expanded beyond placer extraction to include exploration for, and extraction of, lode deposits.[16] To accommodate this type of mining, claim size was expanded to 1,500 feet by 1,500 feet and the requirements for title acquisition and maintenance were modified. A Free Miner acquired the basic title, called a two-post mineral claim, by placing two posts or markers at the extremities of the claimed area. The markers were inscribed with the title's name, and the date of location. The Free Miner then filed this information with the Gold

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15 John F. Walker, "The Evolution of British Columbia's Mineral Act," mimeo, (1974) p. 2.

16 Lode deposits are said to be *in situ*, that is, the minerals have not been disturbed by glacial nor alluvial action as would be the case for placer deposits. Exploration for, and development of lode deposits requires greater surface areas than placer mining.

Commissioner who recorded it in a ledger. The ledger was updated periodically to show whether the title had been maintained or forfeited.

In the early days, the title holder had the option of undertaking improvements worth at least $500 and then applying for a freehold Crown grant of minerals on the surveyed title. These early grants encompassed a number of entitlements, including rights to surface land, timber, water, precious and base metals, coal, petroleum and building stone. Over the years, as the Crown recognized the value of these resources the comprehensiveness of the rights was substantially narrowed. As a result the scope of entitlements varies on a grant by grant basis depending upon the date of issue. In the 1940s, rights to surface lands were stripped from renewed Crown granted mineral claims, and by the late 1950s the issuance of this form of title ceased.

If the title holder did not seek a Crown grant, which required the payment of property taxes, the claim could be maintained through the satisfaction of work requirements. Up to the 1880s these requirements were stringent. To maintain title the miner had to work the claim continuously and an absence from the claim for more than 72 hours (except for illness) was grounds for forfeiture. In 1883 the representation requirement (i.e., continuous presence and work on the claim) was replaced with a $200 per year work requirement. Three years later this was reduced to $100 worth of work within three months of recording or re-recording a claim, and in 1891 the rules were relaxed to allow for the required annual work to be done anytime over the year. In 1895 the holder was given the option of paying $100 in lieu of actual work and in 1898 the option of "banking" excess work in any one year to be applied later was introduced. At the turn of the century, $100 represented about 40 days worth of work on a claim.[17]

These work requirements, established a century ago, remain relatively unchanged to this day. The work requirement for each unit (25 hectares) of a Mineral Claim is $100 in the first three years and $200 thereafter. Payments of cash can be made in lieu of actual work. Excess work can be carried forward and can be applied to the claim holder's other titles. Obviously in real terms the work requirement is a fraction of what it was.

Satisfaction of work requirements has been facilitated by two options open to multiple title holders. Under the grouping procedure, adjacent mineral titles (claims and leases) can be grouped for the purpose of spreading work credits. Portability provisions are similar in that they allow the claim holder to put work credits in a portable account which can be drawn from in the future to satisfy work requirements on the holder's other Mineral Claims. Excess work provisions of the *Mineral Tenure Act* allow title holders to accumulate credits for work in excess of the minimum done in any one year. These

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17 Walker (1974) p. 4

credits can be used to cover work requirements on a Mineral Claim for up to ten years into the future and, for a Placer Claim, up to five years.

Actual expenditures on exploration work vary significantly from year to year. This is shown in Figure 5-1.

With the introduction of modified grid claims in 1975 the system of mineral title acquisition was significantly changed. The old 2-post claims had a maximum size of about 21 hectares (1,500 feet by 1,500 feet). The new system allowed for the staking of 4-post claims based upon units of 25 hectares each. These claims can encompass between 1 and 20 units (i.e., a minimum of 25 hectares and a maximum of 500 hectares) and are acquired by placing posts at the four corners of the claim. Upon introduction of this new system the old 2-post claiming procedure was abandoned. In 1978, however it was reintroduced to accommodate those miners who valued its flexibility.[18] At present both systems are in place, although the 4-post claim is by far the most common (95 percent of staked area in 1990).[19]

As will be discussed in detail presently, Mineral Claims convey the exclusive right to explore for valuable minerals over a specific area, and the right to mine in the event of a discovery. They are perpetually renewable as long as maintenance conditions are met. Primary amongst these are work requirements which have become far less onerous since initiation. The tenure also confers the right to limited production (i.e., up to 1,000 tonnes of ore annually).

Mining leases are generally acquired to secure land tenure for the purpose of mining mineral potential. There are relatively few conditions for obtaining a lease. An applicant is required to have a legal land survey done and post a public notice of the application. There are no minimum or maximum size constraints, no work requirements, and no guarantees that a mine will actually be developed. The leases run for 30 years and can be renewed once. There is no constraint on the level of production. Leases are subject to an annual rental fee of $10 per hectare.

Number, Size and Duration of Mineral Titles

The number and importance, in terms of area covered, of each type of mineral tenure are set out in Table 5-9. Currently there are slightly more than 60 thousand

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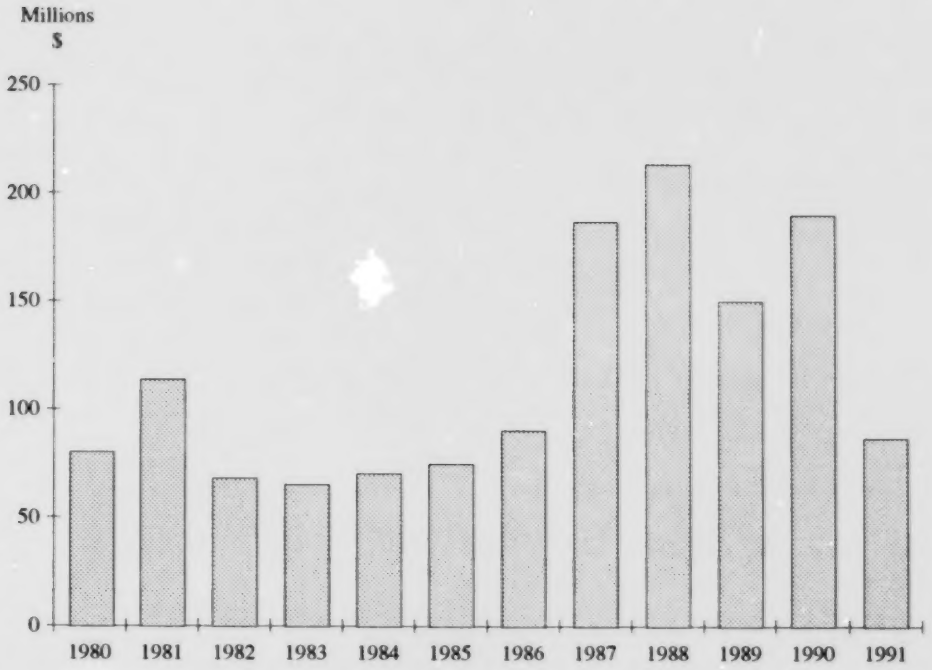
18 The two-post claim could be oriented in any direction while the four-post claim must have cardinal directions (i.e., the boundaries must run true north or south, and true east or west).

19 Placer Claims, which have become a minor form of tenure, have different size restrictions and different staking requirements. The maximum size of a Placer Claim is 50 hectares and is staked with two posts. There are no requirements for the orientation of the claim.

Figure 5 - 1

Mineral Exploration Expenditures
British Columbia 1980 - 1991



Source: *Mining Review*, May/June 1992, p.11

interests covering over 7 million hectares of the province. Mineral Claims account for most of the titles and area covered by mineral interests.

Table 5-9

Mineral Tenures: Number and Area[20]
(as of April 30, 1992)

	Number of titles in good standing	Area (hectares) ('000)
Mineral Claims	43,397	6,205
Placer Claims	2,739	137
Mining Leases	441	34
Placer Leases	1,904	95
Crown-granted Mineral claims*	12,020	688
Total	60,501	7,159

*Preliminary

The rate at which Mineral Claims are staked varies significantly from year to year. This is reflected in Figure 5-2 which shows the number of 25 hectare units staked and recorded as 2-post or 4-post Mineral Claims over the period 1966 to 1990.[21] Area staked ranges from a low in 1975 of 11 thousand units (274,000 hectares) to 106 thousand units in 1983 (2,650,000 hectares). Over time of course most of these claims

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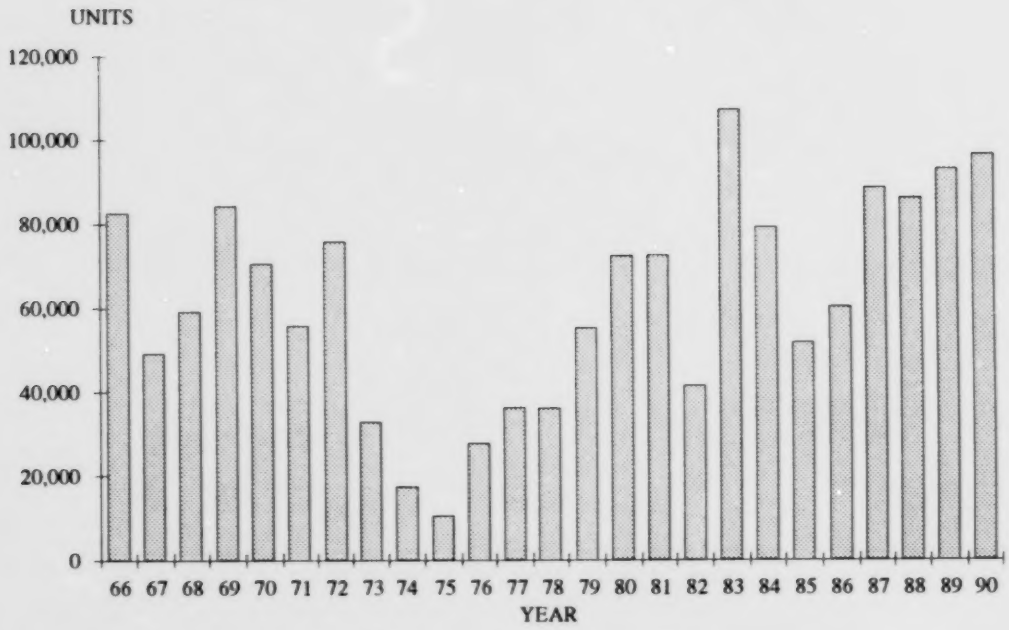
20 Source: Mineral Tenure Review Project, Assistant Deputy Minister's Office, British Columbia Ministry of Energy, Mines and Petroleum Resources.

21 Prior to the introduction of 4-post claims and the unit designation in 1975, 2-post claims of 21 hectares were the rule. For ease of comparison, all claims have been converted to the unit standard. It should also be noted that the total area under claims is slightly exaggerated. These titles are not surveyed, hence prospectors will overlap their claims somewhat to ensure that holdings are contiguous.

Figure 5 - 2

Mineral Claims Recorded in British Columbia (in terms of 25 hectare units) 1966 - 1990



Source: Mineral Tenure Review Project,
Ministry of Energy, Mines and Petroleum Resources

will be dropped. The rate of claim abandonment depends upon mineral potential, the amount of work done, the flexibility of policies allowing the application of work done on one claim to another, and the carry-forward of work expenditures. For example, if substantial, unsuccessful exploration work is done early in the life of the claim, the prospector might simply maintain the claim until excess work credits are exhausted, even though there is no intention of further exploration. Figure 5-3 gives a sense of the rate of claim surrender.

Nevertheless some claims are maintained for substantial periods of time. As seen from Table 5-10 a dozen claims staked in the first two decades of the century are still in good standing and nearly 7,000 are more than twenty years old.

Table 5-10

Number of Claims Currently in Good Standing
By Decade of Issue[22]

Decade of Issue	Number
1901-1910	2
1911-1920	10
1921-1930	4
1931-1940	24
1941-1950	76
1951-1960	1,075
1961-1970	6,774
1971-1980	8,243
1981-1990	30,761

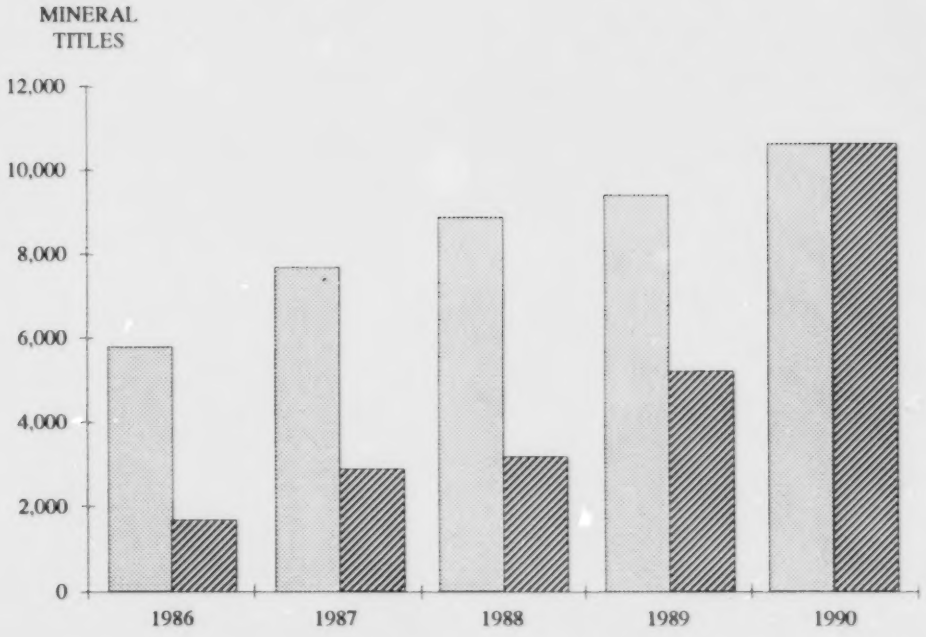
Ownership Distribution of the Titles

The holdings of mineral titles are far more dispersed than forest tenures. At the end of 1990 the top five holders accounted for only 8 percent of the total area under claim, and the top twenty for about 20 percent. This is probably somewhat of an underestimate because the major mining companies are known to have options on

22 Source: Mineral Tenure Review Project, Assistant Deputy Minister's Office, British Columbia Ministry of Energy, Mines and Petroleum Resources.

Figure 5 - 3

Mineral Titles Recorded and Remaining as of December 1990



Source: Mineral Tenure Review Project,
Ministry of Energy, Mines and Petroleum Resources

numerous claims. However, there is little doubt that the exploration stage of the sector is highly fragmented and titles widely held.

Table 5-11

Holdings of Mineral Titles
(as of December 31, 1990)[23]

Number of Recorded Holders	Number of Titles	Area ('000ha)	% of Total Area
Top Five	4,354	635.9	8.3%
Top Ten	5,563	1,017.1	13.2%
Top Twenty	9,103	1,525.4	19.8%

THE BUNDLE OF RIGHTS: MINERAL TITLES

The process of establishing rights over mineral resources begins with acquisition of the right to prospect. This enables the explorationist to stake claims and subsequently apply for leases.

Free Miner Certificate

The mineral tenure system in British Columbia is based on an open entrance policy with few restrictions. Any person or company wishing to explore for minerals must first obtain a Free Miner Certificate. A certificate may be acquired by a Canadian citizen, 18 years or older, who makes an application and pays the prescribed $25 fee. A corporate Free Miner Certificate is available to Canadian companies for a fee of $500. Certificates must be renewed annually. The certificate gives the prospector the right to enter mineral lands, acquire, maintain and challenge title, and produce minerals under certain restrictions. Prospectors are restricted from entering and acquiring title in lands under cultivation or orchards, occupied by buildings and curtilages, in parks, already occupied for mining purposes, and those covered by "no staking" mineral reserves.

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23 Source: Mineral Tenure Review Project, Assistant Deputy Minister's Office, British Columbia Ministry of Energy, Mines and Petroleum Resources.

General characteristics of all titles: comprehensiveness, exclusiveness, and priority

All mineral titles convey rights to resources and resource use beyond the minerals themselves, although these rights fall far short of freehold title to the land. All convey the implicit, exclusive right to benefit from the production of minerals discovered within the tenure area. Title holders also have the right to enter, use and occupy surface lands for exploration and mining purposes, and to use other natural resources, such as timber, to a limited extent.

A very potent right with respect to the use of surface lands is reflected in the priority of mineral titles over other interests. With the exception of those lands closed to staking, mineral tenures are given priority over other privately held surface interests.

> . . . a recorded holder who desires to secure a right of way across, over, under or through private land . . . may take and use private land without the consent of the owner or of a person having or claiming an estate, right, title or interest in, to or out of the land.[24]

Expropriation of private land by mineral tenure holders is subject to approval by the Minister. Additionally, the recorded holder must give notice of the intention to expropriate and the owner is due compensation under the terms of the *Expropriation Act*.

As with forests, the Crown maintains a claim to resource rents attributable to mineral resources.

> The province's rationale for levying mineral taxes is rooted in its ownership of mineral deposits, and its recognition that these deposits have "value." Mineral taxes are aimed at taxing that value.[25]

Unlike forests, the Crown claims only a portion of the resource rents. Under the terms of the *Mineral Tax Act* a two-tiered system is in place for operating mines. A tax of 2 percent is applied to "net current proceeds" which is gross revenues minus current operating costs. If current mine revenues are covering current operating costs the tax is paid even though the mine might not be covering all of its overheads. When the mine has fully recovered its overheads (i.e., exploration, development and mine construction costs) net revenues are subject to a 13 percent mineral tax. This is in addition to all normal business taxes. These Crown charges are applicable to all operating mines, regardless of the title under which the mineral deposit is held.

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24 Section 2(1) *Mining Right of Way Act*.

25 British Columbia, Ministry of Energy, Mines and Petroleum Resources, "Mineral Tax Act, A Guide for Industry," January 1991, p.3.

It must be noted, emphatically, that the holding of any mineral title does not automatically convey the right to commence mining; indeed they do not even convey an unambiguous right to prospect. Mine development is subject to review from the outset of the process. At the exploration stage a permit is required before using machinery to disturb the surface of the ground. As the process continues, permitting and review increase apace. Ultimately, major developments are subject to the review process set out in the *Mine Development Assessment Act.* This process involves a series of reviews by other relevant ministries, environmental impact assessment statements, and possibly, public hearings or consultation. Failure to satisfy regulations can frustrate approvals for mine development at any stage.

In summary, all mineral tenures convey exclusive rights to mineral resources and the implicit right to benefit from them. The right to access and occupy the surface of mineral lands is conveyed as an integral part of the tenure. All mineral tenures provide non-exclusive rights to the use of surface resources. In the event of a valuable discovery, the Crown claims a portion of the resource rent accruing to the mineral resource. Finally, no mineral title guarantees the right to mine.

Mineral and Placer Claims

Placer and mineral titles differ on the basis of the type of deposit sought and the method of extraction. Mineral Claims apply to undisturbed deposits which are known variously as hard-rock or lode deposits. Placer Claims are used to explore for deposits formed by mechanical concentration of minerals from weathered debris. These deposits typically occur at or near the surface in weakly consolidated sediments (e.g., sand bars and river gravel).

Placer claims were first introduced in 1988 under the *Mineral Tenure Act.* Prior to 1988 only leases were available for placer mining and they imposed both annual work requirements and rental fees. Placer Claims and Leases now have similar terms to Mineral Claims and Mining Leases, respectively, in that annual work is required on the claim, and rental fees apply to the lease.

For the most part, the rights and obligations for Placer and Mineral Claims are the same. Any differences will be noted in the detailed descriptions that follow.

-Security: Mineral and Placer Claims are valid for one year and may be held in perpetuity, from year to year, providing the holder has conducted specified work requirements or paid cash in lieu of work.

-Transferability: Title to these claims may be transferred in full and the transfer is enforceable as long as the disposition is in writing and the relevant administrative fees

have been paid. No consent is required and no interests are withheld by the Crown upon transfer.

-Crown Charges: Production from claims is subject to the terms of the *Mineral Tax Act*, described above. However, claims are typically used during the exploration phase and have strict production limits making the generation of taxable revenues unlikely. Administrative fees are charged for recording both title and annual assessment work.

-Obligations: A free miner acquires a claim at the time it is located (staked). Nonetheless free miners must comply with regulatory procedures for locating and recording title. Mineral and Placer Claims are maintained and, in effect, renewed upon the completion and recording of annual work requirements. In both cases the claim holder has the option of paying cash in lieu of work.

For Mineral Claims, exploration and development work must be equivalent to a unit (25 hectare) value of $100 in the first 3 years and $200 per year thereafter. Placer Claims are maintained by completing an equivalent of $500 per claim per year.

Expenditures over the required amount may be applied as credit to that claim for subsequent years, up to a maximum of 10 years for Mineral Claims and 5 years for Placer Claims. Alternatively, excess work may be credited to a portable credit account which can be used to maintain other claims held by the same miner, anywhere in the province. However, only 30 percent of the work requirement for any given claim can be drawn from the portable account.

Miners may not commence work which causes a mechanical disturbance of the ground until a plan of operation (including reclamation) is approved by the Chief Mines Inspector. The Inspector has the authority to request a security deposit to ensure that conditions of reclamation permits are met. Permits may also be required from other public agencies depending on the nature of the work proposed, and may be subject to fees.

Title holders in recreation areas or parks must acquire resource use or park use permits in order to exercise their rights under the *Mineral Tenure Act*.

Small scale production is allowed on claims. While such mining operations on claims are not automatically subject to a review, the Chief Mines Inspector has the discretionary power to designate proposed production as a "reviewable mine development" project. Reviews may be conducted by an assessment panel which, under the *Mine Development Assessment Act*, has considerable authority to conduct inquiries into proposed projects. Such inquiries may require the proponent to conduct biophysical and social impact assessments and participate in public hearings.

-Restrictions: Mineral Claims can have a minimum size of 1 unit (25 hectares) and a maximum of 20 units (500 hectares). In recreation areas claims may be up to 24 units (600 hectares). Placer Claims have a maximum size of 50 hectares. Production is limited to 1,000 tonnes of ore from Mineral Claims and 2,000 cubic metres of pay-dirt from Placer Claims per year.

-Reverted Crown Grants: There is one additional type of claim of minor importance which is sometimes separately reported in title inventories. If the holder of a Crown grant neglects to pay taxes, or dies without heirs, the grant reverts to the province. These lands are distinct from the majority of other Crown holdings because they have been surveyed. Sometimes mineral rights to these properties are reissued as Reverted Crown grants. They are identical to Mineral Claims in terms of rights and obligations, but differ because of the survey. To set them apart they are given this different (sometimes confusing) designation.

Mining and Placer Leases

Any miner holding a Mineral Claim may convert it to a Mining Lease. Similarly, Placer Leases may be obtained for those lands covered by Placer Claims. Major differences and similarities between Placer and Mining Leases are discussed below. Any generic reference to a lease indicates that the regulations apply to both Placer and Mining Leases.

-Security: A Mining Lease is issued for a term not exceeding 30 years. It may be renewed for an additional term if the lessee has complied with the regulations and conditions specified in the lease agreement. Placer Leases are issued for a term not exceeding 10 years and are renewable once.

-Transferability: As in the case of claims, leases may be transferred without ministerial consent. No interest is withheld by the Crown.

-Crown Charges: Annual rental on a Mining Lease is $10 per hectare per year. Placer Leases are subject to an annual rental charge of $5 per hectare per year for surveyed titles and $250 per year for unsurveyed titles. Production from Mining Leases is subject to the terms of the *Mineral Tax Act*.

-Obligations: Holders of leases have essentially the same permit obligations as claim holders. For example, before commencing exploration or development work on a lease, a miner must submit and have approved an intended plan of operation and reclamation. At the same time, there are some significant differences between claims and leases. First, there are no annual work requirements for maintaining leases. Indeed, proof of

production potential or commencement of production is not required to obtain a lease. Second, the land over which a lease is being sought must be legally surveyed, which can involve substantial costs. However, some unsurveyed leases may still exist as issued under previous statutes. Finally, lease applicants must give public notice of the intent to apply for this title.

Any proposed mine on a Mining Lease capable of producing 10,000 tonnes of ore per year is considered a reviewable mine development. At the discretion of the Chief Mines Inspector, mines having a capacity lower than 10,000 tonnes may also be considered for review. Proponents of reviewable mine developments must apply for Mine Development Certificates. The issuance of such certificates is often contingent on the completion of impact assessments and, possibly, a public review. Proposed mining operations on Placer Leases are subject to review at the discretion of the Chief Inspector of Mines.

-Restrictions: There are no tonnage limits on production from a lease.

Crown-granted Mineral Claims

Crown-granted mineral rights are difficult to characterize because each title contains different rights and conditions. To compound the problem, jurisdiction over the management of Crown-granted mineral claims falls in the grey area between the Ministry of Energy, Mines and Petroleum Resources and the Ministry of Environment, Lands and Parks.

Crown grants are registered with the land titles office of the ministry responsible for lands. While surface grants may still be acquired, the province commonly reserves mineral rights to itself. The following discussion summarizes the background and major characteristics of these titles.

-Security: Crown grants may be held in perpetuity as long as taxes are being paid.

-Transferability: Crown-grants and the rights to the resources conveyed with them can be freely transferred without government consent.

-Crown charges: Crown-granted titles are subject to land taxes of $1.25 per hectare per year. Mineral taxes on operating mines are the same regardless of whether the deposit is covered by a lease or Crown grant.

-Obligations: Crown-granted mineral claims which remain valid under the original conveyance are not subject to work requirements.

-Restrictions: Restrictions on what can be produced are documented in the individual conveyances.

SUMMARY : MINERAL TITLES

A summary of the entitlements associated with each type of mineral title is set out in Table 5-12. As with forestry, the tenures range across the spectrum in terms of the completeness of the property rights conferred.

Table 5-12

Characteristics of Mineral Titles

	Mineral Claim	Placer Claim	Mining Lease	Placer Lease	Crown Grant (pre-1959)
COMPREHENSIVENESS					
Minerals	Yes	Yes	Yes	Yes	Yes
Other resources	Limited	Limited	Limited	Limited	Specified in original grant
SECURITY					
Duration: Initial term	1 year	1 year	30 years	10 years	Indefinite
Duration: Renewable	Annually	Annually	Once	Once	n/a
TRANSFERABILITY					
Government consent required	No	No	No	No	No
BENEFITS CONFERRED					
Crown Charge: Rental fee	No	No	Yes	Yes	No
Crown Charge: Land tax	No	No	No	No	Yes
Crown Charge: Resource rent	Yes	Yes	Yes	Yes	Yes
Obligations: Annual work	Yes	Yes	No	No	No
Restrictions: Maximum production permitted	1,000 tonnes	2,000m^3	None	None	None

PART SIX

COMPENSATION FOR MINERAL AND TIMBER INTERESTS

The preceding discussion demonstrates that compensation for takings is a complex issue. It is made more complex when it involves a welter of property rights to publicly owned natural resources. This combination of public ownership and private rights can lead to widely divergent views on an appropriate compensation policy, as is reflected in the range of submissions to the Commission. Some argue that resource interests are simply private property, like a personal residence, and should be treated as such. Some state that since nothing was paid for these interests, there is no need for compensation in the event of a taking. Others envisage a compensation policy that incorporates an environmental audit. Resource interests would be credited their financial loss, but charged for environmental degradation.

The Commission's perspective, as noted at the outset, is very utilitarian, albeit tempered by fairness considerations. The issue is whether the resource interest legitimately created investment backed expectations, and if so, what compensation is required to ensure that future expectations lead to desirable levels of investment.

TIMBER INTERESTS

INVESTMENT BACKED EXPECTATIONS

The allocation of timber harvesting rights in British Columbia has unambiguously been motivated by the public policy goals of economic development, employment stability, revenue collection and more recently, forest management. These motivations are clearly stipulated in the evaluative criteria by which applications for long-term tenures are judged, and they underlay the creation of these tenures.

Tree Farm Licences, established in the 1940s, had two objectives. The first was to implement a policy of sustained yield management, and:

> Second, these licences were designed to promote industrial development, with attendant community stability by providing their holders with long-term supplies of timber sufficient to meet the needs of existing or new utilization plants. Since 1907, Timber Sales, for all practical purposes had been the only means of obtaining new

> allocations of timber, and it was argued that these did not provide raw material supplies that were secure enough to justify the heavy investments required for pulp mills and other conversion plants.[1]

Mills were built in order to fulfill the appurtenant mill requirements of the TFLS.

> Mr. R. M. Shaw (formerly president of MacMillan and Bloedel) testified that the Kraft machine at Port Alberni was installed in order to fulfill an expansion commitment of the company. A provincial forest management licence (subsequently a TFL) obtained by the company required it to expand its facilities to consume the waste products of its sawmills and plywood mills.[2]

However, these licences apparently were not designed to provide all of the appurtenant processing plant's requirements.

> ...while Tree Farm Licences were typically designed to serve a particular pulp mill or other utilization facility, they were not intended to provide its total requirements. By providing only some 80 percent of the timber needed for the plant, the licencee would provide a market for the wood produced by independent firms operating in Public Sustained Yield Units.[3]

The Forest Licences, which now account for over half the annual allowable cut, have a very different history. They are the legacy of the Public Sustained Yield Units (PSYUs) created to provide modest amounts of timber, through competitive bids, to smaller, unintegrated logging operations. As explained in Part Five, over time an informal "quota" system evolved whereby established operators were given preferential treatment when acquiring new licences to replace those that had been exhausted. In 1967, a licence with a longer term (usually 10 years) and additional management responsibilities was introduced. This new licence had no contractual right of renewal, but in many instances did refer to an appurtenant mill. In the late 1960s several of these licences were granted for very long terms (21 years) on the condition that the licencees

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1 Task Force on Crown Timber Disposal, "Forest Tenures in British Columbia," Policy Background Paper, December 1974, mimeo, p. 82.

2 Restrictive Trade Practices Commission, *Report Concerning the Manufacture, Distribution , and Sale of Paperboard Shipping Containers and Related Products* (Ottawa: Queen's Printer, 1962) p. 630.

3 *Ibid*, p. 84 citing testimony of Dr. C.D. Orchard, *Transcript of the Royal Commission on Forest Resources*, 1956, pp. 234, 1924.

construct and operate pulp mills of specified capacities.[4] Contemporaneously, the allowable cut within the PSUYs was increased thanks to the adoption of technology which allowed the use of lower quality timber.[5] This increase was allocated to firms on the basis of demonstrated need which was defined as the excess of manufacturing capacity over allocated timber rights. In some instances operators foresaw the availability of these increased allocations, expanded their manufacturing capacity accordingly, and eventually received cutting rights on the basis of need.

In 1978 the informal "quota" system in the PSYUs was replaced with Forest Licences which offer the holder the right of replacement. These licences often stipulate that the holder construct or continue to operate a processing facility (albeit there are a number of exceptions).

In summary, the two main types of tenure (Tree Farm Licences and Forest Licences) generally require the holder to operate a processing facility. In some instances allocation of the licence was contingent upon the applicant's construction of a major processing facility; in others, expansion or continued operation was a condition of the allocation. In some situations, mills were expanded in anticipation of receiving tenures. As a general rule then, the major long-term licences have created investment backed expectations. In most cases this has resulted in substantial investments. To a lesser degree, the minor tenures have also been the basis for investments, although understandably these are much smaller. This implies a requirement for compensation in the event of a taking. The next question is how to determine the level of compensation

THE VALUE OF TIMBER INTERESTS

Timber harvesting rights on Crown lands have value. From time to time these rights are privately exchanged. The transaction price depends upon the type of tenure and the quality of the timber, amongst other things, and is often substantial. Evidence of value in private exchange leads to two fundamental questions. What gives forest tenures value? Are these values the appropriate basis for compensation?

It is possible that the price paid for tenure reflects the present value of a stream of resource rents that will accrue to the tenure holder. Recall that a resource rent is the value of a natural resource in its state of nature, that is, before its value is enhanced by human endeavour. The source of this value is the differential productivity of resources. For example, two residential homes that are identical in every respect except location,

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4 Peter Pearse, *Timber Rights and Forest Policy in British Columbia*, (Victoria: Queen's Printer, 1976), Volume 2, p. A22.

5 This additional allowable cut was made available through "third band" Timber Sale Licences.

can have very different market values. Usually waterfront homes command a premium over inland homes. This premium is attributable to the superiority of the waterfront location (the view, access to the beach) and the fact that waterfront land is in fixed supply. The endowment of waterfront land has little to do with human effort and therefore the price paid for it will not significantly affect supply. In fact the endowment would continue to exist regardless of whether a price was paid. In the case of timber, differing resource qualities also generate resource rents. Two trees, one balsam, the other cedar, might be of the same volume and might involve exactly the same costs to cut and remove from the forest, yet the cedar will have a higher value and will fetch a higher price if sold. More generally, if the value of the commodities produced from British Columbia timber exceeds all costs (excluding any payment for the timber itself) of production, then resource rents exist.

Timber tenures give holders the right to harvest timber. They do not convey the rights to resource rents. Public policy explicitly deals with these rents. The *Forest Act* provides for payment to the Crown of stumpages, literally the value of the tree on the stump before the application of human effort. However, if the Crown failed to collect all resource rents, this would be reflected in the price a buyer would be willing to pay for harvesting rights. In effect, the difference between the value of the standing timber and anticipated stumpages would be capitalized into the value of the tenure. The buyer would be purchasing the right to obtain timber below its true value. If stumpages extracted all rents, then tenure would have no more value to a sawmill than the "right" to buy wheat would have to a flour mill. Some observers argue that the existence of tenure values provides *prima facie* evidence that rents are not collected.

The uncollected rent explanation for tenure values was set out by Canadian Western Capital Ltd. (CWC) in its recent background study for the Forest Resources Commission.[6] In response to these conclusions, F.L.C. Reed and H.M. Saunders argued that there were alternative explanations for observed transaction values for tenures.[7] They emphasized an analysis based on comparisons of incremental costs and incremental revenues.

This analysis starts with the assumption that a timber processing mill is operating at less than full capacity. Investment in the mill is a sunk cost, it cannot be reversed. Fixed costs (overheads) must be paid regardless of the level of output. If there is an opportunity to purchase additional timber, the mill operator will compare the direct cost

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6 Canadian Western Capital Ltd. "Managing British Columbia's Forest Resources: Structural Alternatives, Financial Considerations and Valuation Estimates," *Forest Resources Commission, Background Papers*, Vol. 4, 1991.

7 F.L.C. Reed and H.M. Saunders, "Detailed Review of Section VII of CWC Report," prepared for the British Columbia Ministry of Forests, August 1991.

of processing the wood with the revenues that can be obtained when selling the processed product. Since investment in the mill is a bygone, the operator will consider only incremental costs and incremental revenues; fixed costs will be ignored because they do not depend on additional throughput. For example, an operator might recognize that the mill has the capacity to produce an additional tonne of pulp without any modification of the facility (i.e., it is running at 1 tonne below capacity). The mill has a remaining life of 10 years. One tonne of pulp fetches $500 and has direct costs (e.g., labour, power) of $250. Per unit price and costs are assumed to remain constant. The mill operator will discount the incremental net revenues ($500-$250) over the ten year period at some notional discount rate (say 10 percent). This is the present value of the incremental net revenue, and it is the maximum amount the operator will pay for the right to harvest enough timber to produce the one tonne of pulp. This reflects the value of tenure. In this case the tenure has value only because the extant mill will ignore fixed costs when deciding whether to buy additional harvesting rights. Assume for a moment that the fixed cost of producing one tonne of pulp is $250. An entrepreneur contemplating investment in a greenfields pulp mill would be unable and unwilling to pay for harvesting rights. The cost (fixed and direct) of production would exactly equal anticipated revenues. There would be no room to pay for the right to harvest timber.

Reed and Saunders argue that given the very limited number of arms length transactions for harvesting rights, observed transactions might simply reflect incremental purchases by mills with idle capacity.

An argument also can be made that long-term tenures have value because they provide the holder with security of supply. The benefits accruing to the holder would be reflected in, for example, lower financing charges from lending institutions. Understandably, lenders would be reluctant to finance major capital investments, such as a pulp mill, if fibre supply were uncertain. A secure supply of timber would reduce the risk facing the lender and be manifested in the interest rate. There is no question that long-term supply contracts have value. However, it should be recognized that normally the provider of a long-term supply contract explicitly or implicitly charges for the security provided. The seller is reducing risk to the buyer. The seller is effectively giving up the option of acting opportunistically in the future (e.g., selling spot in a period of short supply). Logically, any benefit from, say, lower financing costs, should ultimately accrue to the seller, in this case the Crown. In effect, annual rentals for timber tenures are in part a charge for this benefit.[8] If harvesting rights have a market value because of security of supply considerations, this must be because the Crown is not charging enough through the rental system to capture security benefits, such as lower

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8 "...unlike a charge based only on what is harvested, it (rental fee) provides an annual assertion of the Crown's interest in its resources under licence, and compensation for reserving them from other uses in favour of licensees." Peter Pearse, *Timber Rights and Forest Policy in British Columbia*, (Victoria: Queen's Printer, 1976), Volume 1, p. 175.

financing costs. Furthermore, there is no reason to believe that the tenure holder is entitled to benefit from such undercharging by the Crown.

Compensation for Takings

The Commission has been invited by timber interest holders to recommend that compensation for the taking of harvesting rights be based upon the market value of those rights. This simple solution is complicated by two facts.

First, there is no reasonably active market for the exchange of harvesting rights on Crown lands. This is explicitly recognized in the Reed and Saunders critique of the CWC study.

> CWC claimed there was an active market in quota on which to base the analysis. We examined the records supplied to CWC and found that there are few sizeable transactions involving only cutting rights, and these produce a low turnover rate, less than 0.45% annually. This does not constitute an active market. A number of sizeable companies have changed hands, but these were purchased as going concerns, i.e., as an ongoing operation, not something to be broken up and sold piecemeal.[9]

> One of the failures of the CWC analysis is that it does not distinguish between the actual transaction prices where a quota is the only asset transferred and the valuation is clear and unequivocal, as compared to transactions in which the purchase price is allocated among several asset classes and the valuation is discretionary. For "private sector sales" to give any useful indication, they must be transaction prices agreed between the purchaser and vendor, not mere valuations or internal allocations.[10]

Without an active market for harvesting rights, unattached to other assets, the determination of market value would require the application of a discounted cash flow estimate, or a cost based estimate.

A second problem with the use of market values is the potential inclusion in those values of uncollected resource rents. This is a contentious issue and not within this

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9 F.L.C. Reed and H.M. Saunders, "Review of Section VII of CWC Report," prepared for the British Columbia Ministry of Forests, August 1991, p 8.

10 F.L.C. Reed and H.M. Saunders, "Detailed Review of Section VII of CWC Report," prepared for the British Columbia Ministry of Forests, August 1991, p. 33.

Commission's mandate. However, the Commission notes that the controversy over uncollected rents has gone on for more than two decades without clear resolution, that credible observers currently disagree, and that the issue is at the center of the ongoing Canada-U.S. softwood lumber dispute. Under the circumstances, the Commission neither accepts nor rejects the uncollected rents explanation for tenure values. However, it does make the following observation. Rents not claimed by the Crown through the stumpage system do not belong in any formal sense to the tenure holder. Therefore, uncollected rents should not be viewed as a compensable loss in the event of a taking.

This observation is based upon two premises. First, there is no statutory provision stating that tenure holders have rights over resource rents. Second, even if at a point in time stumpages did not capture all rents, there is certainly no guarantee that the situation would persist. Recent history supports this latter premise, in particular the substantial 1987 increase in stumpage rates. Thus even if today there were uncaptured rents, the future stream of these benefits would have to be discounted heavily.

An alternative method of dealing with the valuation problem is to focus on the financial harm done to investments made with the expectation of an uninterrupted supply of a specific volume of fibre. In other words, if the Crown created legitimate expectations that a tenure holder would receive a certain volume of timber, and if the holder made investments in logging or processing capacity based upon those expectations, what is the impact of a taking on the operation of those assets? There are several possibilities.

If the operating asset is completely specific to the withdrawn land, the withdrawal might completely, or nearly completely, destroy the value of the asset. For example, if a logging road were constructed to provide access to a specific cutting area, and if that area were withdrawn from harvesting, then the road would have little, if any, value. The road is specific to the cutting area in the sense that it has no alternative use, and no salvage value if not used. Logging camps and the infrastructure serving them (roads, power) also tend to be specific assets. Mobile equipment, such as trucks, skidders and the like, generally are not specific to particular logging shows and would not lose all value if the logging ceased.

Processing facilities such as sawmills and pulp mills tend to be not as specific to particular harvesting areas as are logging assets. Certainly mills are designed to process certain types of forest profiles, but most have degrees of flexibility. This is evidenced by past practices when withdrawn stands were replaced with as yet unallocated timber.

The effect of a timber withdrawal on a processing facility is to lower capacity utilization. Depending on the cost structure of the mill, this would impose cost penalties of varying severity. In simple terms, the withdrawal of timber will force the mill to

reduce output. In the short-run[11] the capacity of the mill cannot be easily altered. Assuming the mill was sized to operate efficiently at a given output level, per unit costs of processing will rise. This is because overheads (fixed costs) will be spread over a smaller quantity of output. An example will help clarify this.

Assume the mill has fixed costs of $100,000 which must be paid regardless of whether the mill operates. For example, if the mill were financed completely by debt, this might represent principal and interest payments to the bank. The mill produces 400 units of pulp per year, running at capacity. Variable costs per unit are $250, and one unit of pulp can be sold for $500. Total revenues are $200,000 (400 units @ $500/unit), total variable costs are $100,000 (400 units @ $250/unit) and fixed costs are $100,000. The mill is breaking even as costs equal revenues. Now assume timber is removed and output falls to 300 units. Total revenues (300 units @ $500/unit = $150,000) are now less than total costs (variable costs are 300 units @ $250/unit = $75,000; and fixed costs are fixed at $100,000). The mill is now losing $25,000 per year, and will continue to lose this until the fixed cost is no longer fixed (i.e., until the time of plant replacement, or modernization which will allow proper sizing of capacity to the new, lower capacity requirement). Assuming that the mill would run at capacity every year if it had the wood, the withdrawal has imposed an annual cost of $25,000 for as long as plant capacity is fixed. If the mill were compensated by this amount for the period in question, the owner should be indifferent over the taking because the mill would be returned to the break-even position. This series of cost penalties (i.e., $25,000 per year until the mill's scheduled modernization, say 10 years) could be put into present value terms to generate a single value.

It is important to note that this present value of a future stream of cost penalties imposed by the timber withdrawal is in fact the "market value" of a harvesting right, based upon the incremental purchase argument. The cost penalty of a withdrawal is equal to the cost advantage generated by increasing output if the mill were initially producing at less than capacity.[12]

This discussion leads to several conclusions. Some investments predicated upon expectations about timber supply will be rendered worthless by a withdrawal of harvesting rights. These investments would include assets specific to a particular site, such as a logging road. In the event of a taking, the investor, say a market logger,

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11 The "short-run" is defined as that time period in which the enterprise cannot alter all of its inputs, that is, the quantity of at least one input is fixed. In the case of a mill, hourly labour is usually variable in that more workers can quickly be hired as output increases, and can be laid-off as output declines. However, the operating plant (e.g., sorting yards, kilns, digesters) cannot easily be varied in a short period of time. The operating plant is said to be fixed in the short-run.

12 A more technical explanation of this equality is provided in Appendix A-2.

should be compensated for the loss of the asset. Appropriate compensation would cover the cost of the investment. For example, if it were shown that a road had been built 12 months previously for the sole purpose of logging a withdrawn parcel, then the road building costs, plus interest should be paid. If the road were intended to gain access to several sites, some withdrawn and some not, then an apportionment of costs would have to be made.

When assets are not specific to the withdrawn site, the issues of damage and compensation are much more complex. At the outset, it must be clearly noted that no harm is done and no compensation is called for if the dependent processing facility can be worked for the remainder of its useful life. In other words, if throughput can be maintained until the mill is worn out, there is no damage to the asset owner. This leads to three conclusions. First, compensation is not called for when harvesting rights are redistributed but harvesting continues. As long as fibre supply is made available to the processing facilities, and as long as stumpages extract all resource rents, the mills should not be overly concerned over who has the right to harvest.[13]

The second conclusion is that the Crown's liability for compensation is bounded by the life of the affected asset. Damage is done to a specific processing facility. When that asset has served out its useful life (whether through wear and tear, obsolescence or a combination of the two), the harm ceases.

The third conclusion is that options should be sought to maintain throughput for the life of the asset. It is wasteful to render processing facilities wholly or partially redundant if this can be avoided. There are two ways to maintain throughput. The reduction can be delayed while the asset is worked, or, alternative sources of inputs can be found. These options are not mutually exclusive; combinations are possible.

Delayed Deletion

In the absence of technological change or vastly improved silviculture, forest land withdrawals will generally result in a reduced allowable cut and a smaller forestry sector. The question is whether it is better to implement the reduction at the time of withdrawal, or to wait until dependent assets are run down.

The workability of a policy to delay the impact of the withdrawal depends upon tenure duration and policies for deletion periods. Take the case of the TFLs. As it now stands, the TFLs have a life of 25 years. They are replaceable after each 10 year period with a new tenure of 25 years. Uncompensated deletions of up to 5 percent of the AAC

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13 More precisely, the mills should not be concerned as long as the timber was competitively supplied. There would certainly be concerns if timber sellers exerted market power.

may be made each 25 years. Presumably these periods were chosen to reflect the life of the assets committed to processing wood from the TFLs. But do they?

The 1976 Royal Commission on Forest Resources clearly recognized the relationship between the security of supply and the life of forest industry assets.

> Where rights to standing timber are at issue, security has several dimensions. Probably the most obvious is the duration of the right conveyed. As long as the purpose is to support private capital investment, the term must be related to the period required for capital recovery. This obviously varies: a logging company with portable equipment does not require the same term as a pulp or paper plant, for example; and the requirements perceived by investors in an entirely new venture are likely to be greater than are necessary to ensure continuance of an established operation.[14]

The Commissioner recommended that after an initial phase-in period to accommodate the differing terms of extant TFLs, these tenures have a 15 year life. They were also to include an "evergreen" provision that allowed the licencee to add 5 more years to the licence after each 5 years of operation assuming that the terms offered by the Ministry were acceptable.

> Finally, while 21 years may approximate a suitable initial term in order to provide the security for investment in a new enterprise, it is unnecessarily long to maintain it, particularly under an "evergreen" arrangement.[15]

The 1976 Commission also recommended that upon each replacement (each 5 years) the Crown reserve the right to reduce the AAC by 10 percent.[16] In the case of Forest Licences, the recommendation was for a term of 10 years, with the right to initiate a new licence in the seventh year of the contract. The new licence would authorize a volume of at least 80 percent of the expiring licence and was to be open to competition,

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14 Peter Pearse, *Timber Rights and Forest Policy in British Columbia*, (Victoria: Queen's Printer, 1976), Volume 1, p. 64.

15 Ibid., p. 90.

16 The proposal was more complex than this. The Commissioner was concerned that the tenure holders had enjoyed substantial increases in their AACs from the time of initiation to 1975 (in one case nearly a 600% increase) with no renegotiation of the terms of the TFL. He proposed that increases in the AAC on Schedule "B" lands not be automatically allocated to the tenure holder. On the other hand, he recommended that reductions, for any reason, in AAC on "B" lands be limited to 10% each five years.

with the licencee entitled to matching bid privileges. Put differently, the proposed deletion period was 7 years with a 20 percent maximum reduction in the allocation.

This Commission agrees with its predecessor and concludes that the current provisions for deletion introduce undesirable rigidities into the allocation of forest lands. Under the current regime, the Crown does not have the flexibility to signal to mill operators that lands will be withdrawn and that investments should be modified accordingly. The current deletion periods of 25 years for TFLs and 15 years for FLs are unduly long. Confronted with a maximum deletion of 5 percent of AAC over each 25 year period, the TFL holder has, even in the face of increasing demands for withdrawals, little incentive to moderate capital investment to accommodate a lower throughput. Under the present statute, any reduction beyond 5 percent is compensable; hence, there is little risk to maintaining capacity at its original level.

It would be better if the Crown could identify lands to be withdrawn and signal this to the tenure holder. The impact on the AAC could be determined and options explored. If the mill were flexible (i.e., could adjust at low cost to a reduced throughput), it might be best to phase in the reduced AAC immediately. If the mill were inflexible, it might be best to run it at a level warranted by the initial AAC and then, at the point of tenure replacement, adjust the AAC down to compensate for the period of overcutting. This is best seen by a simple example.

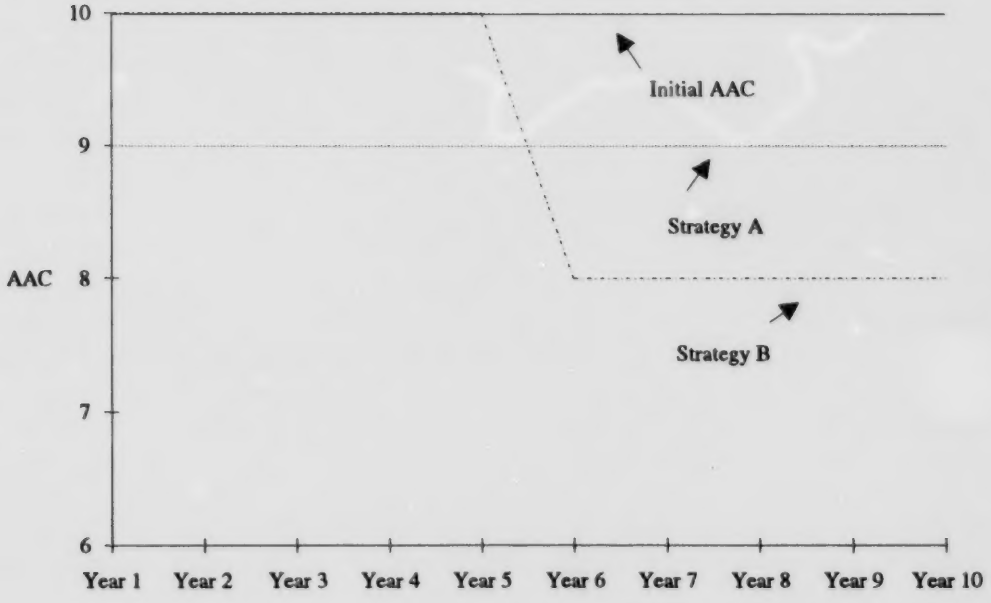
Imagine a forest with an inventory of 100 units, a rotation period of 10 years, and therefore an AAC of 10 units. Tenures expire after five years but may be replaced. At year one the holder, with an established mill, anticipates replacement of an existing entitlement to 10 units of AAC. The replacement is made, but immediately the Crown wishes to withdraw 10 percent of the land for non-timber use and makes this known to the tenure holder. The holder has several choices. The reduced AAC can be accommodated immediately (Strategy A) by reducing the cut to 9 units. This is the sustainable yield of the reduced land base and presumably can be maintained perpetually. Alternatively, the holder can exercise the right to harvest 10 units over the five year period of the contract (Strategy B). However, upon replacement of the tenure in year six, the AAC will drop to 8 units per year for the next five years. At the first rotation (year eleven) the AAC will climb to 9 units. This is shown in Figure 6-1. The choice of strategy will depend upon the magnitude of the withdrawal and the configuration of the dependent mill. But it is up to the operator to determine which strategy is superior.

Some might argue that this is a dangerous notion because it allows abandonment of strict adherence to short-term sustained yield principles. However, it must be acknowledged that the allowable cut is not immutable.

There is no "correct" harvest level for a forest.....Allowable annual cuts are decided within a policy framework of social, economic and biological factors which reflect the social values prevalent at the time of the development of the policy. These social values include how we value the various resources that the forest offers, how much of those resources we wish to consume now, what we might leave for future generations, and our general feelings about future economic conditions. Setting the AAC for a forest region is a complex decision of crucial importance to the forest industry and forestry-dependent communities. It often requires difficult choices between economic, environmental and aesthetic values.[17]

Figure 6-1

Delayed Deletion



Given these considerations, the Commission recommends that the replacement and deletion period for the TFLs be reduced to the five year period recommended by the

17 Forestry Canada, *The State of Forestry in Canada, 1990 Report to Parliament* (Ottawa: Supply and Services Canada, 1991) p. 22.

1976 Commission, and that non-compensable limits be set at 10 percent of the AAC. It sees no reason to reduce the life of the TFL. It also recommends that flexibility be introduced into the implementation of the reduction. The TFL holder should be given the option of delaying the reduction for five years. This is parallel to the management and development planning period and allows time to adapt harvesting, processing and investment plans to the change. It will also give notice to employees, sub-contractors and local communities of the impending reduction and allow them to organize their affairs accordingly.

The ten percent ceiling is intended to apply to withdrawals for non-timber uses. Reductions attributable to re-inventorying, changed harvesting standards and similar factors are not to be included in this ceiling. As pointed out by the 1976 Commission, the TFL holders benefited significantly from increased allowable cuts from the time of initiation of these licences up to the time of that inquiry. Little of this increase was attributable to the efforts of the licencees, and yet their claims to the increases were unconstrained and there was no compensation to the Crown. Symmetrically, reduction of the AAC due to the same set of factors should be neither constrained nor compensable.

Falling AACs, for whatever reason, will increase the need for rationalization of the timber processing industries. Policy should not impede this process. The five percent takeback of AAC upon transfer, acts to slow the movement of harvesting rights to those who value them most. The Commission recommends that this takeback policy be reviewed, and that, at a minimum, its application be flexible when dealing with rationalization of processing facilities. Moreover, fractional transfers should be encouraged where this facilitates rationalization.

With respect to the volume based tenures, the Commission sees no fundamental reason why the current deletion period differs from that of the TFLs. The current period for Forest Licences (15 years) simply reflects the life of the licence, not the life of the processing assets dependent on this source of timber, nor the time required to modify those assets to accommodate a lower throughput. Therefore, the Commission recommends that a five year replacement and deletion period be applied to these licences and that the non-compensable deletion (for non-timber use) ceiling be set at ten percent. Additionally, from the date of notice of a reduced AAC, the FL holder would have the option of immediately accommodating the lower cut, or of postponing for five years, but then accepting a greater annual reduction.

Deletions above the limit

There will be situations where a withdrawal of lands will lead to a reduction in a tenure holder's AAC beyond the non-compensable limits. This is likely to be a particular problem with respect to the TFLs which are area based, leaving no room to spread the

impact over a number of tenure holders. Because most of the TFLs are located in the coastal region, this will be the area most affected. Also, because the TFLs generally contain appurtenancy clauses, processing facilities owned by the tenure holder will be affected.

Beginning with the minor tenures, compensation will clearly be called for when site-specific assets are no longer usable. For example, investments made by a market logger solely to log a withdrawn tract should be compensated fully. The cost of the investment should be grossed up by an interest rate that accommodates both inflation and the time value of money. For assets which serve several sites (e.g., a road serving multiple tracts), costs should be prorated. When withdrawals displace SBFEP licencees they should be allocated equivalent timber elsewhere on terms at least as good as the original licence.

The more complex problem is how to compensate non-site specific investments such as a major processing mill. Commonly, mills draw timber from many sites and, on the Coast, considerable distances. The straight-forward method to mitigate the impact on the operator's processing facilities is to replace the wood. There are two broad strategies available to achieve this. First, the available cut from the remaining lands within the tenure can be increased. Second, wood can be brought in from outside the tenure. These alternatives are not mutually exclusive.

One means of increasing yields from remaining lands is through intensive silviculture. Currently, TFL holders who engage in intensive silviculture can increase their AAC through the allowable cut effect. Section 52 of the *Forest Act* allows for an increase in the AAC of volume based tenure holders, if they engage in "incremental" silviculture. This is taken to mean something more than just establishing a free growing crop of trees. In the event of a taking, the Crown should have the option of replacing the AAC through a program of intensive silviculture. In other words, compensation could consist of funding such a program. The Commission recognizes that this is certainly not a panacea. Not all lands are suited to intensive treatments (i.e., costs outweigh gains). However, in performing the calculations, the Crown should recognize the potentially positive effects on employment opportunities and community stability that such programs could have.

Another method of increasing available supply is to expand the commercially usable forest. It is estimated that 54 percent of the provincial forest area is non-productive in the sense that it does not warrant commercial use.[18] In some instances it may be more economic for the Crown to make these forests a viable timber source than

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18 HST Consortium, "Report on the Current Status of Forest Resource Inventories of British Columbia," *Forest Resources Commission, Background Papers*, Volume 7, February 1990, p.III-4.

to curb supply to the mill. For example, the Crown might choose to tie compensation to additional costs of exploiting otherwise uneconomic forests.

These methods (and undoubtedly there are more) may help to ease the shortfall in supply, but it is very unlikely they could eliminate it if the taking were substantial relative to the size of the tenure. Thus, timber would have to be acquired from outside the tenure. In this case, compensation should be based on the difference between the cost of timber acquired from third parties and the cost to the claimant of harvesting from the tenure. This payment would have to continue until the processing facilities were run down.

Consider the simplest case, where the Crown withdrew forest lands and, with the agreement of the licencee, provided a replacement with as yet unallocated stands. If the replacement stands were more distant from the mill, the claimant would rightfully demand compensation for the additional costs of, say, transporting crews to the stand. This would be an additional cost of the timber to the mill.[19]

Replacement of harvesting rights is no longer a general solution because the AAC has, for the most part, been fully committed. The implication is that the claimant will have to purchase timber from third parties. On the Coast this means purchasing timber at prices established by the Vancouver Log Market. It is argued that this market is deep enough to generate reliable prices and is thoroughly monitored.

> On the Coast, some 25 to 30 percent of the coastal harvest is sold at arm's length in the Vancouver Log Market, and product values are assessed according to values in that marketplace.
>
> Licensees provide to the Ministry photocopies of each sales invoice, documenting the species and grade makeup of the transaction as well as the price received for the parcel. Staff in the [Ministry of Forests] Valuation Branch review all of the data received, clarify any apparent problems, and add the transaction information to an existing database.[20]

This establishes the price which must be paid for timber displaced by the land withdrawal. The claimant must be paid the difference between this price and the costs that would have been incurred had the logs been harvested from the withdrawn stand. The determination of logging costs will not be easy, however use can be made of cost data compiled by the Ministry of Forests.

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19 This would be true only insofar as the additional logging costs were not charged against stumpages.

20 Province of British Columbia, "Response to Countervailing Duty Questionnaire; Certain Softwood Lumber Products from Canada (INV. C-122-816)," December 13, 1991, p. BC IV-21.

> Site-specific appraisals require estimations of the....costs typically incurred in their production....this involves estimating logging and silviculture costs on the Coast. In the Interior it involves estimating those same costs, plus the costs of sawmilling.
>
> In all cases, the tables and formulas used to that end are based upon surveys of widespread industry experience over the period of a year. Those surveys capture both the relevant cost data kept by licensees as well as the physical data concerning each stand of timber and each site. Ministry staff design and conduct each survey, audit each licensee's records, and supervise the analysis needed to relate experienced costs to timber and site condition.[21]

These costs will have to be adjusted insofar as they do not reflect all costs of logging. In particular capital costs will require attention.[22]

An example will help to clarify how the system would work. Assume a tenure with 100 units of AAC. Land is withdrawn which reduces the AAC by 50 units. There have been no previous withdrawals so 10 percent, or 10 units, are not compensable. The tenure holder opts not to delay the impact of the reduction, so is entitled to 90 units. Of this, 50 units can be taken from the remaining lands in the tenure. Forty units must be purchased. The price of a unit of timber on the Vancouver Log Market is $100. The cost of harvesting a unit on the affected tenure is $70. The additional cost to the licencee of buying on the market is $30 per unit. The claimant is entitled to $1,200 ($30 x 40) per year for five years, assuming that the affected mill has at least a five year useful life. At the end of five years, a new deletion period begins. The AAC is 50 units so 5 units may be deleted. The Crown owes the claimant the price-cost differential on 35 units or $1,050 ($30 x 35) annually for five more years, again assuming the original mill still has a useful life. The sequence will end when the original mill is run down. Usually mills are upgraded on a continuous basis, therefore an audit of the mill would have to be made at the time of the withdrawal and an estimate of useful life (absent renovation) made.

The monies would be placed in an account annually. Tenure holders have some discretion over the proportion of their AAC that they harvest each year, although this is constrained by cut controls. This same flexibility should be built into procedures for

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21. *Ibid.* p. BC IV-29.

22 There is no allowance in the stumpage appraisal system for profit and risk; hence, operating costs are less than the actual costs of harvesting. If the operating costs calculated by the Ministry of Forests were used without correction, this would imply omission of an additional, implicit cost of logging. The Commission recognizes that estimation of the cost of capital is not simple.

drawing from the account. TFL holders may cut within plus or minus 50 percent of the AAC each year, and within plus or minus 10 percent over five years. Symmetrically, the claimant would be allowed to draw between plus or minus 50 percent of the account each year and between plus or minus 10 percent over five years. Any amount left after 10 years would revert to the Crown. Interest on monies in the account would be payable to the Crown.

Now, a legitimate question is what effect this will have on prices on the Vancouver Log Market. This will depend on the size of the taking and the possibility of increased supply. Referring to the estimate that between 25 and 30 percent of the coastal harvest goes through the Vancouver Log Market, this implies volumes of around 6 million m^3 per year. To put this into perspective, the average coastal TFL is about 846,000 m^3 (in terms of AAC). It should also be noted that significant volumes of timber are exported. On average, over the last decade, 2.2 million m^3 of logs (and 1.2 million tonnes of wood chips) were exported annually from British Columbia.[23] In the 1990-91 accounting year, 86 percent of log exports were under permit (i.e., the logs originated on Crown lands or were otherwise subject to export restrictions).

Nevertheless, it is possible that withdrawals would have an effect on prices. If so, stumpages, which on the Coast are based on Vancouver Log Market prices, would rise. Since the prices of wood based products are largely determined on world markets, this would put pressure on all operators subject to the stumpage increase. Ultimately, the least efficient operators would find it advantageous to release their harvesting rights to others who valued them more. In equilibrium, the price on the Vancouver Log Market would reflect the costs of harvesting plus stumpages. During this period, the claimant would be insulated from these stumpage increases on the volume of timber purchased through the account.

In the Interior, TFLs are of much less significance. Therefore, the inflexibility associated with withdrawals from area based tenures is much less. The effect of withdrawing land in a Timber Supply Area is a reduction in the total AAC. This reduction can be spread amongst all volume based licence holders within the TSA. There are opportunities for innovative reallocations between volume based tenure holders in the event of a withdrawal. Superficially, it might seem fair to spread the effects of a deletion equally among all licence holders. However, it might be more efficient to simply retire one processing facility rather than condemn all to sub-optimal capacity utilization. A possible solution would be to identify the least costly tenure to retire, then allow remaining operators the option of contributing financially to compensate the retired mill, rather than having their own allocations reduced. In effect, operators within the

23 Statistics Canada, as cited in Council of Forest Industries of British Columbia, "British Columbia Forest Industry Statistical Tables," April 1992.

supply area would be allowed to buy their way out of an imposed, non-compensable deletion. The Commission recommends that the Crown explore this type of arrangement.

If, in the Interior, a land withdrawal did result in a reduction in AAC beyond the non-compensable level, the tenure holder operating a processing facility would be entitled to compensation for lost throughput. Unfortunately there is no log market within the region; hence, compensation based upon timber replacement costs would be more difficult to determine. However, log prices are collected in the Ministry of Forests' annual mill survey and these could provide a starting point for determination of market prices. Care would have to be taken because, in some situations, the number of potential transactors is very restricted (i.e., few buyers or few sellers); and this could have a definite influence on the transaction price. Notwithstanding this problem, the creation of a fund to compensate for the additional cost of purchasing timber should be established and operated in a fashion similar to that proposed for the Coast.

In its deliberations the Commission has studied alternative policies to compensate for the reduction in a mill's feedstock. One forward looking technique is to attempt to estimate the present value of future net revenues forgone because of the loss of timber. This is extremely complex, involves predictions of future prices, costs and capacity utilization, and can lead to very different results depending upon assumptions made. Alternatively, a cost based approach would involve estimating the economic cost of the existing mill and then assessing the cost penalties attributable to lower capacity utilization. While the latter method appears more tractable because it relies on information about the past rather than the future, it too is fraught with difficulty. In particular, any lump sum payment for a future stream of cost penalties incorporates an implicit assumption that the immediate post-withdrawal cost and output levels will persist. This is unlikely because the mill owner would have every motivation to mitigate the effects of the reduction.

More importantly, compensation based upon increased costs (or forgone revenues, for that matter) raises the question of what expectations concerning wood supply the operator had prior to investing. Generally, the cost effect of a reduction in output will bear more heavily on an underutilized mill (and lost incremental revenues will be greater) than one running at or near capacity.[24] This leads to the conclusion that compensation for an identical withdrawal based on cost penalties could differ significantly between two mills. This would depend upon capacity utilization at the time of the taking. All things equal, the mill suffering excess capacity would get more. This does not satisfy fairness criterion, because it would be seen to reward the operator who had erred in sizing the mill in the first place. This, coupled with the possibility that mills

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24 This point is explained in Appendix A-2 which also deals with the relationship between incremental net revenues and cost penalties associated with increases and decreases in capacity utilization.

have been built in anticipation (as opposed to promises) of receiving timber would lead to very real fairness problems. In any event, if a cost penalty (or foregone income) approach were used it would have to be based on the assumption that mill was running at or near capacity at the time of the taking. Otherwise, imprudent investors would be seen to be rewarded for their errors.

In most cases, estimation of future cost penalties is bound to be administratively difficult. However, there may be situations where it is not economically rationale to replace lost timber supply through purchases. Consider a remote facility, so far from alternate wood sources that transportation costs are prohibitively high. Given that it was worthwhile keeping the facility in operation at a lower level of output, it might be more reasonable to simply compensate on the basis of cost penalties rather than bringing in timber. Calculating compensation on this basis will entail estimating fixed costs. Some of these will be easy to calculate, such as salaries of administrative staff, fire insurance, property taxes and the like. Others will not be so easy. In particular, estimation of the per-period cost attributable to fixed capital such as land, buildings and machinery is likely to raise two main areas of concern. First, an appropriate level of depreciation will have to be determined. This is likely to diverge from book value. Second, the initial cost of fixed capital will have to be grossed up to present value terms. The Commission recommends the use of a nominal interest rate to accomplish this. Finally, it will be necessary to estimate the period of time over which the facility will bear the increased per unit fixed costs. This involves a determination of the time to major renovation, machine replacement and obsolescence. The Commission realizes that the calculation of the cost penalty will be complex, but also recognizes that in some instances it will be necessary. In any case the Crown should have the flexibility to compensate on the basis of the cost penalty method when it is clear that alternate supply is not feasible.

The Commission has sought a straight-forward, easily implemented compensation policy with respect to forest tenures. In a world characterized by fragmented timber holdings, unintegrated operations, and a stumpage system which unambiguously extracted all resource rents from the public's forest, the solution would be easier. Operators who lost harvesting rights would be compensated for site specific investments, and mills which depended upon these sources of supply would enter markets for logs to replace lost supply. The more efficient mills would outbid the less efficient and the resource would move to its best use. But this is not the world of the British Columbia forest sector. Here, a complex web of rights and obligations confounds the issue and makes a simple solution elusive.

OTHER SOURCES OF TENURE VALUES

Aside from the incremental cost or value and uncollected rents explanations for the value of harvesting rights, there are other possible instances where tenure will have value to the holder.

In a situation where an unintegrated logging operation (i.e., a market logger) holds tenure, the market value of the tenure might well be driven by the investments of others. Presumably the logger would have made investments in specific assets (e.g., roads) which, in the event of a withdrawal, would be compensable. However the value of the timber might well exceed logging costs (including stumpages). This would happen if an adjacent sawmill depended on purchased timber and paid for logs on the basis of an incremental cost and revenue comparison. If timber were withdrawn, the dependent sawmill would be forced to produce at a lower output level and would suffer a cost penalty. If the market logger had been capturing the full incremental value of the logs, the mill would be indifferent over the withdrawal. However, if the market logger were compensated for the value of the timber, this would entail the payment to one party (the logger) for the investments of another (the sawmill). Put differently, the market logger would realize a gain because the sawmill was not self-sufficient in timber. Since the purpose, from a utilitarian perspective, of compensation is to protect investment backed expectations, payment of incremental values to the market logger is not warranted. Insofar as mill investments were made based upon expectations that the market logger would continue to supply, they were made by the sawmill owner and not by the market logger.

It is also possible that, in some situations, operators with above average quality timber stands or below average costs might capture some rents. The setting of stumpages is not based on precise measures of the costs or timber values of each operator. Estimates of operating costs and selling prices are used in the calculation. It may be that, at a particular point in time, the value of a stand is underestimated and the operator subsequently reaps some resource rents. However, if stumpages in aggregate and over time, collect all rents, these instances would be randomly distributed and no single tenure holder could anticipate systematic undervaluation. In short, tenure could not have a value based on an underestimation of, say, the selling price of a particular species, or the misestimation of the species mix because, over time, errors in the other direction (i.e., overestimation of values) would impose losses on the tenure holder.

An individual operation might also reap rents if its costs were systematically below industry averages. Particularly astute tenure holders could organize and operate their facilities more efficiently than others and beat the average. In such cases, harvesting rights have value to the holder because possession of the timber allows the operator the opportunity to exercise superior business acumen. But does the withdrawal

of harvesting rights extinguish the acumen? Only if the operator's advantage is specific to the lands that are withdrawn. This, on the face of it, seems unlikely. Generally, superior business skills are not limited in their application to particular forest stands, although they might well be limited to a particular industry. Ultimately, those skills should be exploitable within the forest sector. In fact, in the normal course of affairs one would expect that above average operators would displace the less efficient and therefore become the average.

Timber Licences

Harvesting rights clearly have value when Crown charges do not capture resource rents. This is the current situation with respect to Timber Licences. These licences, known collectively as old temporary tenures until revision of the *Forest Act* in 1978, were granted between 1865 and 1907. These tenures are subject to an annual rental fee and a royalty upon harvest of the timber. They are not subject to stumpages, and historically royalties have been significantly below stumpages charged on other Crown lands. Timber Licences account for less than one percent of the province's forest lands but they cover some of the richest timber stands.

> Not surprisingly, the early lumbermen and timber speculators sought out the best timber and so many of the early licences and leases contained, and do contain, much of the finest timber in the province. They were established in the most accessible locations, mostly near tidewater along the southern coast and on Vancouver Island, and often strategically positioned in the mouths of rivers or in valley bottoms.[25]

It is important to recognize that the physical characteristics of the lands covered by these licences make them prime candidates for reallocation to public use. They account for some of the most accessible old growth, coastal timber stands in the province and they have been the object of recent, bitter land-use disputes. As the call for withdrawal of these lands from industrial forestry is likely to continue, the question of compensation warrants careful consideration. The core issue is whether the holders of Timber Licences are entitled to compensation for lost resource rents in the event of a taking.

There is no question that royalties have historically been below stumpages. There is also no question that the Crown could have brought these charges into line, and that many think the Crown should have done so. This in fact was the key recommendation of

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25 Task Force on Crown Timber Disposal, "Crown Charges for Early Timber Rights" (Victoria: Queen's Printer, 1974) p. 11.

the 1974 Task Force which inquired into the issue.[26] While amendments to the *Forest Act* were passed in 1974 by the Legislature to accomplish this end, they were never proclaimed.[27] From the perspective of compensation policy, any expectations about the relationship between royalties and stumpages must have been tempered by the knowledge that this could have been changed at any time. Furthermore, there is scant evidence to suggest that investment backed decisions were made on the basis of expectations that the relationship would not change. The Commission has no knowledge of mills that were constructed on the basis of access to cheap, royalty bearing wood. In short, Timber Licences do not explicitly confer the right to low-cost timber, and there is no compelling evidence to suggest that investments were made on the basis of such an expectation. As a result, the Commission recommends that uncollected resource rents not be factored into any compensation for the taking of Timber Licences.

Transitional Gains Problems

Finally, the Commission has considered potential situations where transaction prices have been established in the past for particular harvesting rights. This would occur when the current holder was not the original licencee (i.e., when the current holder had purchased the tenure). This is particularly problematic if the purchase was made during a period when Crown charges did not collect all resource rents and both parties to the transaction believed the situation would persist. In such a case the value of the uncollected rents would be capitalized into the price of the tenure. The Commission has been urged to accept the proposition that non-compensation for uncollected resource rents would unduly penalize tenure purchasers who had effectively paid to the seller the capitalized value of that stream of rents. This issue was addressed by the 1974 Task Force in the context of old temporary tenures.

> Private acquisition payments are of no relevance to the present policy issue, except insofar as they indicate that resource rents are not being captured under the present royalty arrangements and are being capitalized instead in private market values. Private transactions in old temporary tenures were made in full knowledge that the Crown reserved the right to adjust royalties (and other terms and conditions) in such way as to protect the public interest as circumstances changed.[28]

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26 *Ibid*, p.46.

27 Peter Pearse, *Timber Rights and Forest Policy in British Columbia*, (Victoria: Queen's Printer, 1976), Volume 1, p. 97.

28 Task Force on Crown Timber Disposal, "Crown Charges for Early Timber Rights" (Victoria: Queen's Printer, 1974) pp. 24-25.

This finding can be generalized to all timber on Crown lands. Private transactions for all tenures were made with the full knowledge that the Crown could alter charges (including stumpages, royalties, and rentals), terms and conditions in order to protect the public interest in these resources. The Commission concludes that tenures which have been privately exchanged should be treated no differently than those that reside with the original licencee. Anticipated uncollected resource rents should not be compensable in the event of a taking, regardless of the ownership history of the tenure.

SUMMARY: COMPENSATION FOR TIMBER INTERESTS

The general compensation principle to be applied in takings of private interests in Crown timber is payment for the costs imposed upon those who made investments with the expectation that the interest would continue. The principle is applicable to all interests under review (Tree Farm Licences, Forest Licences, Timber Licences, Woodlot Licences, Licences to Cut, Road Permits, Free Use Permits, Christmas Tree Permits and Pulpwood Agreements). In some instances the damage to the asset will be clear (a logging road constructed by a market logger for the sole purpose of gaining access to a withdrawn logging site). In other cases, the calculation will be complex and difficult.

With respect to assets rendered unworkable by the taking, the Commission recommends that the tenure holder be paid the cost of the asset plus interest. If the asset has been worked, the extent to which it is used up (i.e., depreciation) should be considered.

For non-site specific assets which can continue to be worked, the Commission recommends compensation in the form of a fund to pay for the additional costs of obtaining timber. In some instances the fund will be used to increase the yield of forests still under harvesting rights. In other cases the fund will allow the mill to purchase timber from other sources and thereby continue to work the asset. In some instances, where alternate supplies are impractical, it may be necessary to compensate on the basis of cost penalties imposed on the facility by the withdrawal. The Crown should have the flexibility to choose the most rational base for compensation.

MINERAL INTERESTS

Investments in mineral exploration and mine development differ significantly from those in forestry. By their very nature they are overwhelmingly site specific. Consequently, the withdrawal of interests from specific sites will render investments worthless. To address the compensation issue it is necessary first to understand the sequence of investments in mining, and the extent to which resource interests parallel the development of those investments.

THE MINING SEQUENCE

The Physical Process

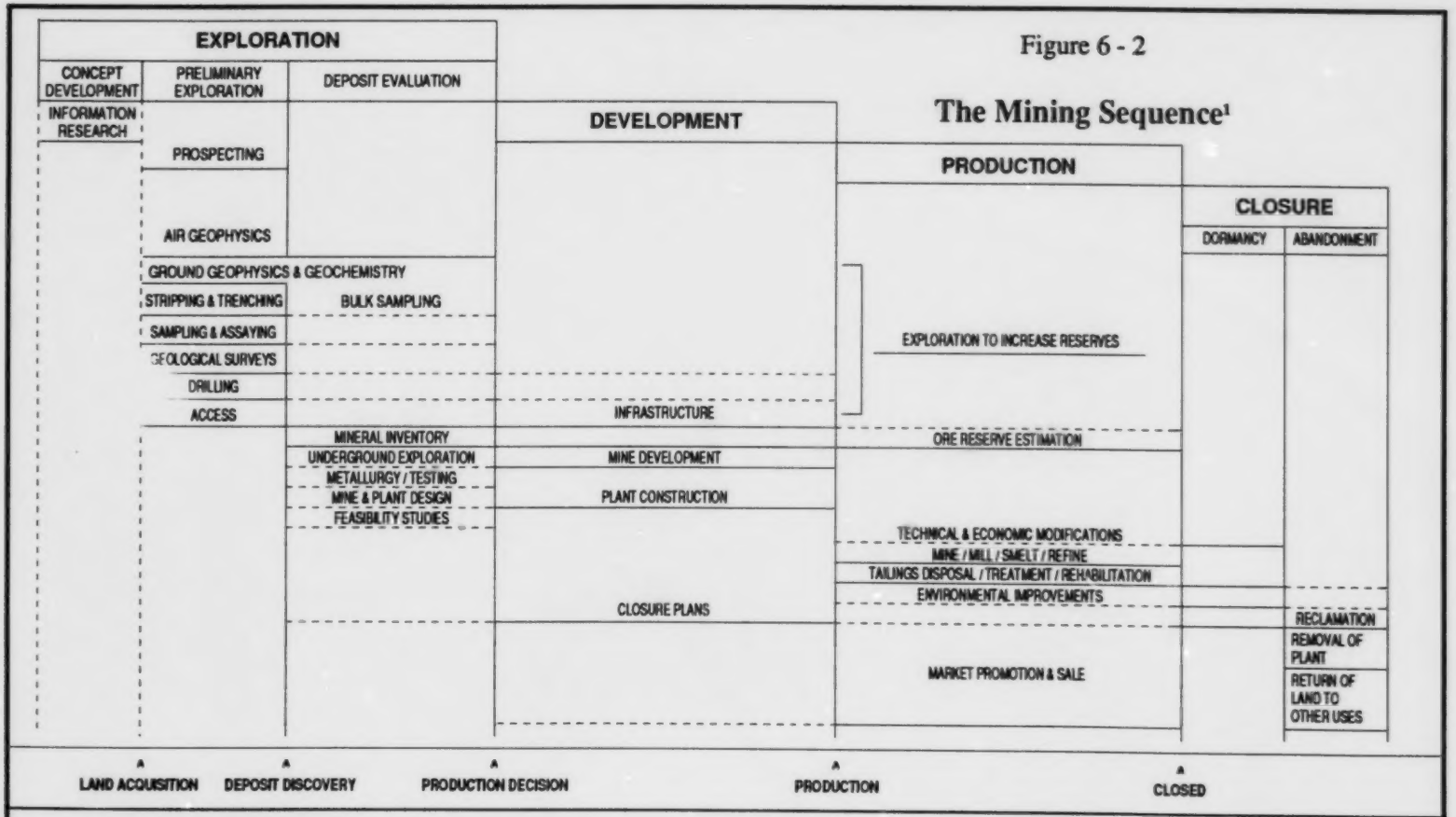
The sequence of development of a mining property is set out schematically in Figure 6-2. The process can be divided into four broad stages; exploration, development, production and closure. These stages are, in turn, divisible into more narrowly defined steps.

The exploration stage begins with a geologic idea or concept commonly based on the identification of indicators of mineral potential. This is followed by a preliminary investigation that generates additional geological, geochemical and geophysical data. As information accumulates, the prospector must determine whether further exploration is warranted. If results of the preliminary work are promising, exploration proceeds to delineation of the quality and quantity of the mineralization. This allows an estimation of the deposit's potential value. The exploration stage culminates with feasibility studies which comprise an evaluation of the economic viability of bringing the mineral deposit into commercial production.

If the feasibility studies are positive and funding can be secured, the process enters the development stage. At this stage major investments are made in infrastructure, mine development and plant construction. This is followed by the production stage where minerals are mined, processed and sold. Closure results when either the deposit is exhausted or other factors make further operation uneconomic (e.g., a significant and sustained drop in the price of the commodity). In the event of a closure the mine is either maintained in a dormant state or abandoned (permanent closure which requires surface reclamation).

Figure 6 - 2

The Mining Sequence[1]



[1] Adapted from Ontario Ministry of Northern Development & Mines

The Investment Process

As reflected in Figure 6-2, investments generally increase at each step of the exploration stage and escalate rapidly during the development stage. Given the heterogeneity of properties, both the duration and investment level of each stage will vary from one to another. Nevertheless, relative expenditures hold true for most properties. That is, the development stage, entailing the construction of infrastructure, the mine and plant, requires much higher investments relative to earlier stages.

The Process of Establishing Mineral Rights

In many, if not most, jurisdictions the process of establishing property rights over minerals on public lands roughly parallels the mining sequence. Claims, usually of short duration with work requirements, provide security to the prospector during the preliminary exploration step and into the deposit evaluation step. When the claim holder is reasonably sure of an economically viable deposit, which would be apparent at the end of the deposit evaluation step, greater security of tenure is required. This is commonly provided by converting the claim to a lease that is generally of much longer duration than the initial claim and can confer additional property rights.

In some jurisdictions this demarcation between claim and lease is clearly tied to the production decision. The New Brunswick *Mining Act*, for example, requires that a claim holder seeking conversion to a mining lease must provide the Minister of Natural Resources and Energy with a formal feasibility study. The *Act* sets out in great detail the issues which the report must address; these include geological data, marketing data, cash flow estimates and ultimate reclamation plans.[29] In the United States unpatented mining claims on federal lands are not validated unless there is evidence of a discovery of valuable minerals. Effectively, the "evidence" would justify a production decision.[30]

In other jurisdictions, British Columbia among them, conversion from claim to lease requires no evidence that the property has moved from the exploration stage to the development stage. In fact, there is no sharp distinction between the two titles either in terms of rights or physical stage of development of the property. Under the current statute the Mineral Claim holder has a chattel interest in minerals within the claim, priority over other tenures and the ability to renew the claim annually, providing that work requirements are done and fees paid. Mining Leases are defined as interests in land. They provide priority over other tenures, require a survey and may be issued for a renewable 30 year term. In moving from claim to lease, the interest holder neither has to make a clear commitment to commence mineral production, nor produce evidence that a

29 *Mining Act*, S.N.B. 1985, C. M-14.1, Section 29.

30 See Appendix A-1.

commercially viable deposit has been discovered. All that is necessary is that the applicant comply with procedures (e.g., survey the site, pay a fee and post a notice).

From a public interest perspective, the purpose of the claim is to provide prospectors with enough security to encourage exploration for commercially valuable mineral deposits. Bluntly, it is an instrument to stop claim jumping. This can be achieved, as it is elsewhere, by granting the claim holder exclusive rights to continue to explore within the limits of the claim and to exploit mineral deposits, if exploitation is deemed feasible on geologic, economic and social grounds.

It is not clear to the Commission why protection from claim jumping requires property rights over as yet undiscovered minerals. Furthermore, the imposition of a work requirement clearly reflects an underlying "use it or lose it" philosophy, which is consistent with the notion that this resource interest, like most, was intended to facilitate economic development in the province. The Commission has found no evidence to suggest that such claims were ever intended to facilitate speculation, nor to provide the holder with an option value (i.e., to give the holder the option of mining or not mining).

Upon discovery of commercially viable deposits, and the decision to produce, a compelling argument can be made that the claim holder needs greater security to justify the substantial investments required for mine development. For example, the duration of the property right should parallel the life of the mine. Because the magnitude of ore reserves might not be known at the development stage, provisions should exist to extend the right in the event of initial underestimation of reserves. Additionally, the interest holder should have the exclusive right to produce and sell minerals from the property. These additions to the "bundle of sticks" making up the property right could be the basis for the distinction between Mineral Claims and Mining Leases.

THE VALUATION PROCESS

The ability to appraise accurately a mining property also parallels the mining sequence. Properties which are in the exploration stage are much more difficult to appraise than those in the development stage. Producing mines with established reserves and known costs of production can usually be evaluated with greater accuracy.

The difficulty of evaluating exploration properties is clearly recognized in the

literature dealing with the subject.[31] One practitioner has grouped elements of the mining sequence to reflect the determinacy of valuation.[32] These are set out below.

A. INDETERMINATE VALUE	1. Geologic idea or concept 2. Anomalies 3. Claims staked (based on anomaly) 4. Claims staked (based on "hot" area) 5. Additional geological, geochemical, or geophysical data
B. PROBABLY INDETERMINATE VALUE	6. Development of a model of a target deposit 7. One drill hole in a mineralized zone
C. PROBABLY DETERMINATE VALUE	8. Two drill holes in a mineralized zone 9. Three drill holes in a mineralized zone
D. DETERMINATE VALUE	10. More drill holes (added to indicated reserves) 11. Preliminary feasibility study 12. Enough holes to define proven and probable ore 13. Feasibility study 14. Financing and marketing terms concluded 15. Construction of mine/mill 16. Producing mine

According to this taxonomy, properties where a detailed delineation of the mineralization has been completed fall into the determinate value category. This is not to say that properties falling into groups A through C are without value or cannot be valued. Practitioners are often called upon to valuate mining properties for a myriad of reasons, and valuate they do. However, valuations of undeveloped mining properties are of necessity very subjective and are based upon a host of valuation techniques. In short, there is no single accepted methodology for evaluating properties in the exploration stage. This is reflected in often widely divergent estimates by well informed, professional practitioners.

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31 See Appendix A-3.

32 Ross Glanville, "Valuation of Mining Properties," in *Mining Law: Selected Topics*, material prepared for Continuing Legal Education, Vancouver, April 1989.

COMPENSATION FOR MINERAL INTERESTS

Earlier it was stated that a basic principle of compensation policy is that when property rights are robust and the value of taken property easily determined, the requirement to provide full compensation is strong. It was also noted that full compensation approximates, in most cases, market determined values.

In the Commission's view, compensation policy for mineral interests is confounded by ambiguities in the province's mineral policy. The implementation of a coherent compensation policy for mineral rights would be greatly facilitated if, as in other jurisdictions, the distinction between claims and leases more clearly reflected the real distinction between exploration properties and properties in the development or production stage. Such a distinction could be formalized by requiring the lease applicant to submit a feasibility study showing the economic viability of the deposit and a mine development plan. This would provide evidence that the applicant required (and would be justified in having) more potent property rights to protect the very substantial investment required for mine development. This would also place Mining Leases into the category of mineral properties with determinate value.

In the result, the Commission recommends that the *Mineral Tenure Act* be revised to bring mineral tenures into line with the mining sequence.

As has been emphasized throughout this report, public policy makers must (implicitly or explicitly) weigh the costs and benefits of reallocating natural resources from private to public use. That calculation would be easier if values in private use were better known and were disclosed by the interest holder before reallocation took place; that is, before the decision to withdraw mineral interests was made. Presently, policy makers must contend with demands for withdrawal of lands upon which mineral claims of unknown value are situated. Given the difficulty of appraising exploration properties (even when done by professionals one property at a time), it is unreasonable to assume that policy makers can do this, particularly when numerous claims are involved. Furthermore, the claim holder has every incentive to exaggerate the value of the claim. If it is believed that the claim has commercial value, exaggeration may deter withdrawal. If it is believed that the claim has no commercial value, exaggeration may reap generous compensation.

If, however, the granting of a Mining Lease were contingent upon the disclosure of evidence of commercially viable deposits and firm commitments to move to the production stage, then the very existence of leases in areas proposed for withdrawal would have a salutary effect on the decision making process. Private value would be known with greater certainty and the entitlement for full compensation in the event of a taking would be strong. Moreover, the distinction between exploratory stage and

development stage properties would be made by the interest holder in a non-confrontational context, free of incentives to distort declared property values. This could be achieved by making a "bankable" feasibility study a prerequisite for the awarding of a lease.[33]

A "bankable" feasibility study is undertaken when the interest holder is confident that extraction of a deposit will be economically viable. These studies are expensive, costing up to $2 million. They require geological information (the quantity and quality of the deposit), analysis of economic variables (input and output prices), and consideration of social viability (whether the mine will meet environmental standards). The feasibility study is reasonably comprehensive, and in most cases is undertaken prior to mine development. Absent a compulsory sale, or contractual requirement[34], such studies are only undertaken if the parties have genuine confidence in the viability of the project. In effect, the interest holder declares when the property has passed from the exploration to the development stage; the credibility of the declaration is enhanced by the investment in the work underlying the study.

Exploration Properties

The Commission concludes that there is a real distinction between exploration properties and those in the development or production stages, and that the Mineral Claim is the appropriate title for allocating rights to exploration properties. It is clear that claim holders should have the exclusive right to explore for minerals within the claim, and the exclusive right to convert the claim to a lease if conversion is warranted (a commercially viable mineral deposit is discovered). However, there appears to be no compelling reason to incorporate property rights over as yet undiscovered minerals into the claim. Furthermore, the Commission concludes that the valuation of mineral properties in the exploration stage is extremely difficult and subject to a high degree of variance.

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33 A feasibility study can be viewed as "bankable" when it meets the requirements of lenders of senior financing for mining operations in Canada with respect to information and form.

As noted, the New Brunswick legislation sets out the contents of a "feasibility study report." The issue of what constitutes a feasibility study was addressed in *Taseko Mines Limited (N.P.L.) v. Cominco Ltd.*, (June 11, 1990), Doc. No. CA010118 (B.C.C.A.), [1990] B.C.D. Civ. 2690-04 (unreported). The parties did not dispute that a final feasibility study would entail: bulk sampling or large diameter drilling; construction of a small scale or pilot plant; close spaced drilling; calculation of ore reserves; plan of the mine; selection and pricing of equipment; concentrator design; extraction plan design; flow sheets; and environmental studies.

34 Feasibility studies are often incorporated in exploration agreements. One party to the agreement might be required to undertake a feasibility study to fulfill contractual obligations.

With respect to compensation for the taking of Mineral Claims, the Commission considered a number of alternatives. One is the American practice of refusing compensation for unpatented claims (on federal lands) which are in the exploration stage (properties with unproven valuable mineral deposits). Another is payment in kind which involves substituting one mineral property for another. A third option is monetary compensation which requires adoption of a basis or formula for determining the amount of payment. One method is to base compensation on documentable expenses directly related to the exploration process as is the practice in Alberta and several other jurisdictions. Another method is to base payment on an estimate of market value.

Although some communications to the Commission recommended no compensation for Mineral Claims, most on the basis that nothing had been paid for these interests, this alternative was rejected. Mineral Claims do convey rights and these do deserve compensation, both in order to avoid significant disincentives to future exploration and to meet fairness criteria.

In some cases payment in kind will be appropriate. Submissions to the Commission have pointed out that for some explorationists the mining claim conveys benefits beyond the narrow right to explore for valuable minerals. It can provide a place to live and work. In the event of a taking, government should certainly attempt to accommodate those interest holders who wish an exchange of mineral rights rather than monetary compensation. In the exchange, consideration should be given to disturbance costs (e.g., the cost of moving equipment) and the value of chattels associated with life style (e.g., a cabin) but there should be no compensation for direct exploration costs on the taken claim. In the event that the interest holder has accumulated work requirement credits on the taken claim, these should be portable to the new claim. While payment in kind will be a feasible solution in some cases, the Commission recognizes that its application will be limited. Generally, monetary compensation will be required.

A majority, but not all, of the submissions emanating from the mining sector (explorationists, mining companies and consultants) advocated compensation based on estimates of market value, notwithstanding the difficulty of calculation. The Commission rejected this alternative on two grounds. First, it is not clear that Mineral Claims do, or should, convey complete property rights to unproven deposits. Second, valuation of such properties is difficult, expensive, and subject to wide variation. To adopt such a policy would insure persistently high settlement costs for both title holders and government.

In the result, the Commission recommends a cost based compensation policy for exploration properties. There are several reasons for this decision. First, calculation of expenditures is tractable. Second, compensation of direct exploration costs satisfies one definition of fairness. That is, the claimant would be returned to the position which

would have existed had the investment in exploration not taken place. Simply, the claim holder is reimbursed out-of-pocket expenses. Third, this policy is practiced, either *de facto* or *de jure*, in other jurisdictions with no identifiable, significant distortions of exploration incentives. Manitoba and Alberta are cases in point. Further, the procedure was followed in settlements involving the establishment of the Kluane National Park.

The Commission recognizes that a cost based compensation policy does have shortcomings: non-productive exploration will be compensated; compensable costs must be defined; moral hazard is introduced; and a line must be drawn between exploration properties and advanced properties. These are problems of implementation and will be addressed presently.

Advanced Properties

Development and production properties are different. The development process requires very substantial investments and the value of assets, both processing facilities and mineral deposits, is better known. These are the most likely winners in the high risk mining business. The Commission believes that rights to these properties are, and should be, relatively strong. It also believes that valuation approaching market values is tractable.

Non-compensation for advanced properties has been rejected out of hand. This would certainly have a deleterious effect on future investment and would be viewed as patently unfair. Cost based compensation is an alternative, and is in fact the procedure set out in the Alberta legislation. In that jurisdiction all agreements, including both metallic mineral exploration permits and metallic mineral leases are subject to the cost based procedure. While this might appear harsh, it was clearly not the intention of the framers of this policy to apply it to advanced properties. This was set out in the background study leading up to the compensation regulations.

> Areas from which minerals are being produced will not normally be the subject of compensation. It is assumed that production would be permitted to continue through its normal lifespan and that interdiction of mineral rights and, in turn, compensation payment will not be applied to areas of this nature.[35]

Rather than rely on the assumption that advanced properties will not normally be the object of a government taking, this Commission prefers to set out explicit policies to

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35 Government of Alberta, "Task Force Report and Recommendations, Compensation Policy for Loss of Mineral Rights," April 1976, mimeo, pp. 4-5.

deal with the eventuality. It recommends that advanced properties be subject to compensation based on market values.

The Commission recognizes that the demarcation between the exploration and development stage is itself subject to interpretation. It would be far better if the interest holder had the incentive and obligation to declare when the property had passed from one stage to another in a context other than a dispute over compensation for a government taking. A preferable context would be the natural progression from claim to lease, where securing the lease required evidence of a commercially valuable mineral deposit. If the recommended changes to the *Mineral Tenure Act*, which envisage a sharp boundary between claim and lease, are implemented, exploration properties will fall under the former, and development and production properties under the latter. Rescinded claims would be subject to cost based compensation; leases to market value based compensation. If the recommendation for changes to the rights and requirements associated with these mineral tenures is not acted upon, then the *Mineral Tenure Act* should be modified to deal with compensation issues. Specifically, the distinction between exploration and more advanced properties should be made explicit. Advanced properties would be defined as those at, or beyond, the production decision point at the time the right was rescinded. The test should be whether there was adequate information at the time of the taking to make the production decision. If there was not, the property was in the exploration stage. If there was, then the property was in an advanced stage. This hurdle is confronted and is well understood by the mining industry and related service industries such as financial intermediaries in the normal course of business. Setting out an operational criteria should be achievable. Some relevant guideposts are noted in the following section.

Option Values

The Commission, in its deliberations, has been mindful of the argument that mineral interest holders should not be denied the potential fruits of their labours, that is, potential benefits from the information which they have accumulated. The argument is that the accumulated geological information about a currently non-viable deposit allows the interest holder the option to activate development in the event that exogenous factors (mineral prices, technology, costs) change. It is true that a cost based compensation policy for exploration properties would not reflect these option values. But should it? If a property were held in expectation of profitable development in the future, this would represent a speculative strategy. In the case of a claim the work requirement would have to be viewed as a payment to maintain the option. This is not at all the rationale for current mineral policy.[36]

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36 The Commission recognizes that "use it or lose it" requirements are not necessarily efficiency enhancing. In some instances it may be socially beneficial to delay extraction of a natural resource.

IMPLEMENTATION OF THE POLICY FOR MINERAL TITLES

Compensation for exploration properties would be based on expenditures by the interest holder on preliminary exploration and deposit evaluation. What costs should be included?

Compensable Costs

The Commission recognizes that in some instances non-productive exploration will be rewarded. This could be avoided by basing compensation on the lower of expenditures or market value, thereby avoiding compensation for fruitless exploration initiatives. While appealing to some, this procedure contradicts the basic presumption underlying a cost based policy. The presumption is that market value is an elusive datum for exploration properties. Obviously some explorationists will perceive that they have been over compensated and some under compensated, however it seems unfair to propose a policy which addresses the former and not the latter.

Compensable costs can be defined by drawing from the current regulations dealing with work requirements on Mineral and Placer Claims. The types of costs accepted in fulfillment of work requirements include: wages; food and accommodation for all persons employed in the exploration; costs incurred in transportation for employees, supplies and equipment; instrument rental; geochemical and geophysical surveys, including equipment rentals, fuel, and equipment loss; geochemical and petrographic analyses; linecutting for grids; topographic or photogrammetric mapping in preparation for exploration; trenches, open cuts, adits, pits and shafts; construction of roads and trails; and legal land surveys. This is not an exhaustive list, but it does show that the definition of legitimate costs is tractable. Additionally, implicit costs (e.g., unpaid work of an owner/operator) should also be compensable. Failure to do so would unduly penalize smaller operations where interest holders do much of the exploration work themselves. All fees paid to government which directly relate to maintaining the tenure in good standing would be compensable, including cash payments in lieu of work.

In the event that the interest holder at the time of the taking was not the original interest holder, the purchase price (in a *bona fide* arm's length transaction) of the tenure would qualify as a compensable cost.

A critical datum in a cost based compensation procedure is the cut-off date. Simply, how should historical expenditures be treated? As a starting point, if the current title holder is the the original title holder (i.e., the title was not purchased) only costs

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However, it is not within the mandate to consider the costs and benefits of this policy. It is the policy. If it is deficient it should be debated, albeit elsewhere.

incurred by the current tenure holder should be included. Clearly the current holder has no entitlement to costs incurred by previous explorationists who subsequently abandoned the property. Given that only costs incurred by the current holder are compensable, the cut-off period will necessarily be arbitrary. The goal is to provide cost based compensation for properties of unknown value. Properties of known value will either have been moved out of the exploration stage into development or they will have been abandoned. The cut-off point must be set to avoid compensation for properties which have effectively been abandoned in the sense that further exploration is not warranted.

The fact that a claim is in good standing (i.e., work requirements have been satisfied) does not confirm that a property is being explored. This is because tenure holders do not have an incentive to abandon a claim after the decision not to proceed with exploration has been made. This is due to the low cost of maintaining the tenure.

> It is common practice for many companies to hold properties using excess assessment work credits, even though no work is planned and the properties will be dropped when the credits run out. Such properties generally have nil value, in spite of the fact that past expenditures may be considerable.[37]

In discussing the use of a cost approach to appraise properties, Ross Lawrence suggests using the cost of exploration work over the "most recent three or four years," and the approved budget for the upcoming season.[38] Also discussing a cost approach for valuation, William Roscoe states,

> Very old work, since its value deteriorates with time, can be discounted or included at a nominal cost. This might apply to old geophysical surveys, trenching, drilling or underground work.[39]

There is no definition of "very old work" although the context of the article suggests that work six or seven years old would be included in the valuation calculation.

Recognizing that any cut-off period is arbitrary, but also recognizing that a cut-off must be imposed, the Commission suggests a five year period. In the event of a

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37 William E. Roscoe, "Getting Your Money's Worth," *The Northern Miner Magazine*, February, 1986, p. 18.

38 Ross D. Lawrence, "Valuation of Mineral Assets: Accountancy or Alchemy," Paper presented to the annual general meeting of the Canadian Institute of Mining & Metallurgy, Quebec City, May 2, 1989, mimeo, unpaginated.

39 William Roscoe, *loc. cit.*

taking of mineral tenure on an exploration property the tenure holder would be entitled to exploration and related costs going back five years from the date of notice of the taking. Costs incurred after that notice would not be compensable.

The Distinction between Exploration and Advanced Properties

In order to identify those properties eligible for market value based compensation and those eligible for cost based compensation a distinction must be made between exploration and advanced properties.

The identification of an operating mine should not be difficult. They operate. The determination of whether a closed mine is dormant or abandoned might be trickier, but certainly resolvable. Properties in the development stage should also be relatively obvious. Ongoing plant, infrastructure and mine construction would evidence active development.

Problems will occur at the interface been exploration and development. This interface is marked by the production decision. Until that decision is made, there is no unequivocal evidence of an investment backed expectation that a mineral deposit will be commercially viable. It is important to recognize that throughout the exploration stage each investment decision is based upon the answer to a fundamental question. Does the accumulated information about this property justify the investment in accumulating additional information? The decision to continue exploration is not based on knowledge that a commercially viable deposit will be discovered. Certainly there is a hope that this will be the outcome. Certainly the explorationist believes that the property is worthy of investigation. But there is not knowledge of future discovery. If there were, the odds would not be 5,000 to 1 against success. This process of making incremental investments in the accumulation of knowledge is akin to most research.

How then to define this threshold between exploration and development in an operational but not unduly arbitrary manner? It is the Commission's view that the feasibility study step of the process provides an appropriate threshold. If a property has passed through the feasibility study step at the time of the notice of the taking, it should be eligible for market value based compensation. If it has not reached that step it must be assumed that insufficient knowledge exists to warrant a production decision.

The Commission believes that the concept of a "bankable" feasibility study is well understood by the industry. The Commission also believes that in the normal course of the mining sequence, enterprises will produce such documentation for their own use and for the use of financial institutions. A model for the required documentation is found in the New Brunswick mining legislation and is attached as Appendix A-4 to this report.

In the event of a taking, the existence of a formal feasibility study would assist in evaluating properties in the development stage, that is situations where the production decision was positive but actual production had not commenced. Such documentation would also assist government in determining the value in private use of the resource, before making the reallocation decision.

PART SEVEN

DISPUTE RESOLUTION MECHANISMS

INTRODUCTION

Ideally, compensation disputes will be settled through negotiation. However, it cannot be expected that this will always be the case. Some final dispute resolution mechanism is required. What characteristics should this mechanism display?

All agree that dispute resolution mechanisms should provide timely compensation and operate fairly and efficiently. Tradeoffs must, of course, be made. Fairness and efficiency may tug in different directions, for example, when considering the scope of appeals. Similarly, timeliness may sometimes have to be relaxed in order to accommodate procedural fairness. The challenge therefore, is to strike the right balance. The decision maker must be independent of the parties and should enjoy their confidence. The decision maker must also be competent. Competence, of course, means the ability to manage dispute settlement processes, to assess evidence and to apply the relevant principles. Beyond this, competence may also mean technical expertise in mining, forestry, economics or natural resources. The decision makers (and parties) must have full access to accurate information. The process should also be consistent and predictable in order to facilitate negotiated private settlements. Where the parties are able to gauge in advance the probable outcome, their initial negotiating positions will be better informed and more reasonable.

EXISTING MECHANISMS

Existing dispute resolution mechanisms in the area of resource compensation include the courts, the Expropriation Compensation Board, and commercial arbitration. All three come into play when dealing with natural resource takings and valuations. The *Expropriation Act*[1] has been applied in respect of mineral interests (though there is some legal debate about whether it applies to claims, as opposed to leases). This Act is, however, expressly excluded in the case of forests. Instead, deletions under section 53 of the *Forest Act*[2] are referred to arbitration. The *Forest Act* does utilize the machinery of the *Expropriation Act* in limited situations (the taking of private land for roads per section 102). Courts maintain some jurisdiction over both types of disputes.

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1 S.B.C. 1987, c. 23.

2 R.S.B.C. 1979, c. 140.

Expropriation procedure

The *Expropriation Act* was enacted in 1987, replacing a large number of provisions in other statutes providing for expropriation and compensation. The Act established the Expropriation Compensation Board composed of a Chair and other members appointed by the Lieutenant Governor in Council. The Chair is appointed for 5 years and the members for 3 years. All are renewable. Members may be either full or part time. The Board conducts its hearings in panels of three.

Part 3 of the Act (sections 6 to 16) sets out the pre-expropriation process. Section 6 of the Act requires that notice be given in advance to the owner of land that is to be expropriated. Following an expropriation decision, the owner may request an inquiry under which the Board (in its discretion) appoints an independent person to inquire into the expropriation and make recommendations regarding the choice of a site for the public work. The inquiry does not look into or question the project for which the expropriation is sought, but is limited to looking into whether the proposed expropriation is necessary to the project. The report of the inquiry officer is submitted to the approving authority which may approve, modify or reject the expropriation. Linear developments, such as highways, transmission lines, pipelines, are excluded from this part.

Part 4 of the Act (sections 17-23) deals with the expropriation process itself. Section 17 provides for final approval by the "approving authority." Following approval, the expropriating authority is required to appraise the value of the property, and then advance this amount to the owner (section 19).

Parts 5 and 6 set out the principles and procedures for compensation. The owner has one year within which to appeal to the Expropriation Compensation Board if dissatisfied with the amount of the advance payment. The Board may uphold, raise or reduce the amount of compensation. There is a further appeal, with leave, to the B.C. Court of Appeal.

Section 44(3) deals with the property owner's costs in pressing a compensation claim. If the owner receives more than 115 percent of the advance payment, the owner is entitled automatically to costs. Unlike the ordinary case in courts, these are the actual, reasonable costs of appraisals and legal advice rather than costs set out in a fixed schedule (which generally understates the true costs). Where the owner receives less than 115 percent of the advance payment, the Board has discretion to award costs. Costs may be paid in advance on an interim basis (section 47).

Arbitration

Another dispute resolution mechanism is established by the *Commercial Arbitration Act*.[3] Arbitration involves the appointment of decision makers on a case by case basis. The actual composition (numbers, qualifications) of an arbitration panel may be set out explicitly in private contracts or in a statute.

Arbitration is the present dispute resolution mechanism for compensation under the *Forest Act*. Section 53(6) provides that if the parties cannot agree on the amount of compensation for a deletion the dispute may be submitted to one or three arbitrators. Whether the arbitration is before one or three arbitrators is the choice of the person to be compensated. In the case of a single arbitrator, the parties must agree on the appointment. Failing agreement, the Supreme Court appoints the arbitrator. By section 12 of the *Commercial Arbitration Act*, where there are more than two arbitrators, the award may be made by a majority of arbitrators, but where there is no majority, the decision of the chair is the final decision.

An arbitral award may be appealed to the Supreme Court on a question of law where the parties consent, or with leave of the court. Section 31(2) provides the court with guidelines regarding leave applications. Essentially, the court will grant leave only where the matter is of great importance to the parties and there may be a miscarriage of justice, or where the point of law is of importance.

Cost awards are made at the discretion of the arbitrator. Arbitrators may call their own witnesses. Appeals on questions of law may be taken to court with the consent of all the parties or with the court's leave, where it considers the matter of great importance.

DISCUSSION AND RECOMMENDATIONS

One of the difficulties faced by the Commission is that there has been practically no experience with either arbitration of expropriation processes in the area of natural resource takings. Submissions were made urging the use of both, and also suggesting the creation of a new free-standing tribunal. There was no consensus among the submissions on this point. Another difficulty is that there is no way of telling in advance how frequent resource takings will be. Notwithstanding these difficulties, it is possible to specify principles of dispute resolution that will work to implement the method of compensation recommended.

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3 S.B.C. 1986, c. 3.

A permanent institution

Should dispute resolution be housed within a permanent institution or left to the process of arbitration? Arbitration does offer certain advantages. In the past, claims for compensation in respect of natural resource takings have been infrequent and complex. Arbitration can be initiated to deal with individual disputes as they arise. Most importantly, experts can be appointed as arbitrators. Individuals with the appropriate expertise could be nominated to deal with specific cases. In addition, arbitration provides considerable procedural flexibility. Procedures may be streamlined and tailored to the specific dispute at hand.

Notwithstanding these advantages, the Commission recommends that compensation disputes should be decided by a permanent tribunal (though the parties may, by agreement, choose arbitration). There are several reasons for this. First, arbitration, like any *ad hoc* approach, would have to draw upon a fairly small pool of experts who otherwise earn their living from government or industry. This at least creates an apprehension of possible bias. A permanent tribunal, staffed by full-time members with some security of tenure, is more independent and goes some way towards eliminating this apprehension.

A permanent tribunal offers other advantages not available from an *ad hoc* approach. Most importantly, the tribunal would, over time, acquire experience and expertise. Its decisions should be in writing so that it could begin to develop a known body of jurisprudence. Its permanent existence and the tenure of its members provide continuity. These attributes all enhance predictability and therefore facilitate privately negotiated settlements.

No new free-standing body

Should a new tribunal be created or should existing mechanisms (such as courts or the Expropriation Compensation Board) be employed? Several submissions urged the Commission to recommend a new free-standing tribunal to deal with resource compensation issues. Courts, it was argued, are expensive and have no specialized expertise in resource and compensation matters. Similarly, the Expropriation Compensation Board deals primarily with the valuation of real property. The expertise required in this area is somewhat different, and not perfectly transferable to the valuation of resource interests. A specialized tribunal would be staffed by experts and would more rapidly develop the necessary expertise.

Some submissions pointed to models from other jurisdictions and the Commission also canvassed several alternatives. Yet in other jurisdictions, such free-standing boards and tribunals generally have a far wider mandate than the determination

of compensation for takings. They deal with land-use conflicts more generally. The Commission has not been asked to develop a process for resolving such conflicts, and believes that presently the anticipated frequency of takings does not justify the creation of a new, specialized tribunal.

While rejecting the creation of a new body, the Commission is persuaded by the argument that resource compensation requires the development of some expertise, and that continuity and consistency is valuable. As between courts and the Expropriation Compensation Board, the latter is more likely to develop the necessary expertise. It is therefore recommended that the Expropriation Compensation Board be used as the dispute resolution mechanism in the case of both mineral and forest interests.

Expertise and assistance

The Commission considered recommending the establishment of a special Resources Division of the Board. This Division would be staffed by members with some expertise or experience in the area. However, present staffing at the Board does not permit the formal establishment of such a Division, nor does the anticipated workload justify it.[4] Instead, the Commission recommends only that this type of expertise be considered as a factor in future appointments. Hopefully, the Board will develop an informal division of labour with expertise in the area of resource interests. If resource compensation disputes become more frequent, the creation of a special Division should be reconsidered.

While the creation of a formal Resources Division is not recommended, the Commission does acknowledge that the technical issues involved in resource compensation disputes may sometimes require expertise that is not fully transferable from the typical real estate valuation. In addition to the appointment of appropriate members, the Board should be expressly empowered to retain its own experts to undertake investigations, provide reports and advise the Board on all matters related to the valuation of resource interests.

Encouraging consensus

One of the more important insights gained from an examination of other models is that practically across the board there is a new effort to encourage consensus-based solutions. Ideally, compensation should be the product of negotiations between the parties. In the absence of agreement there will need to be a body that has the authority to make final decisions. But that body should have the capacity to assist the parties to

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4 The present Board has two full time members and three part time members. Since November, 1991 the Board has heard 17 cases (not including applications and interlocutory matters).

arrive at their own solution by aiding their negotiations or providing the opportunity for mediation prior to initiating the more formal process.

The Manitoba *Mines Act* creates a Mining Board with jurisdiction to resolve a wide variety of disputes.[5] The Board is authorized to help the parties resolve their dispute before the Board imposes a solution. Similarly, under the New Zealand *Resource Management Act, 1991*,[6] land-use disputes are managed by a Planning Tribunal. Section 268 of the Act provides that after a dispute is lodged, with the consent of the parties, a member of the tribunal (or another person), "conduct mediation, conciliation, or other procedures designed to facilitate the resolution of any matter..." The member who undertakes this function is not debarred from his or her role as adjudicator where the parties agree, or where the member and the Tribunal agree that it is appropriate. An example in British Columbia is the Mediation and Arbitration Board under the *Petroleum and Natural Gas Act*.[7] This Board, empowered to resolve surface rights and compensation disputes, is given the authority to attempt mediation prior to more formal arbitration.

The Commission recommends that the Board should have wider powers to facilitate settlements between the parties. The Board should be able to conduct pre-hearing conferences. It should have the ability itself to provide assistance to the parties, or should be able to appoint an independent person to do so. Such assistance could take the form of assisted negotiation, conciliation or mediation. Where a member of the Board itself provides such assistance, that person should sit as a tribunal member only if the parties consent or if the Chair and the member agree that this is appropriate.

Other settlement incentives

The parties should be given other incentives to settle. Under the present Act, cost awards are the primary mechanism for achieving this. Under the current structure there is usually complete indemnification for legal and appraisal costs. Where the claimant receives more than 115 percent of the advance payment the award of costs is automatic. In other cases the award is discretionary. Unsuccessful claimants are never required to pay costs to the expropriating authority or to return any advance already paid. The owner in an expropriation case is thus treated more generously than the ordinary litigant. The liberal treatment of real property owners is based on the notion that owners who are

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5 *Mines Act*, R.S.M. 1987 c. M-160, as am.

6 New Zealand Statutes, No. 69 of 1991.

7 R.S.B.C., c. 323.

expropriated have little bargaining power against expropriating authorities and that they should feel free to seek legal and appraisal advice.[8]

The cost system provides a large incentive to the expropriating authority to settle, and little incentive to the owner. Nearly all expropriation cases are settled without resort to the Board. While expropriating authorities may sometimes initially make rather "conservative" offers, the threat of an appeal to the Board and likely cost awards causes most offers to increase significantly. Some have suggested that as a result these settlements are "too much." The Commission expresses no opinion on whether settlements are too high, but does note that there is little settlement incentive on the claimant's side.

The issue is whether this system is equally appropriate in resource compensation disputes. The Commission is of the opinion that it is not. The interests at stake are different and the valuation methods are different. Unlike many real property expropriations, the basis for valuation will not be market value. Even with the proposed recommendations there will still be considerable subjectivity in calculating compensation. If settlements are to be encouraged, incentives must be provided to encourage reasonable valuations by both sides. The gap between the opposing positions must be narrowed.

The Commission recommends that for the purpose of resource compensation disputes, cost awards should be tailored in a more subtle and balanced fashion. There are two ways in which this could be done. The Act provides that a tariff of costs may be set by the Lieutenant Governor in Council. Such a tariff might be based upon the existing Supreme Court tariff and should establish a scale of reasonable costs somewhat below actual costs. Requiring claimants to bear a portion of their own costs would act as a deductible, deterring unfounded appeals. Secondly, in cases where the claimant is unsuccessful, costs should ordinarily be denied altogether and any interim cost payments should be returned. And when the claim was unreasonable or frivolous, costs should be awarded against the claimant. This proposal continues to be more generous to the claimant than equivalent schemes in ordinary litigation. In civil litigation, even involving the government, costs ordinarily are borne by the loser. In criminal matters, acquitted individuals do not ordinarily receive any compensation for their costs (with the exception of legal aid).

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8 Law Reform Commission of British Columbia, *Report on Expropriation* (Law Reform Commission of B.C.: Vancouver, 1971).

Appeals

The scope of appeals is a matter of controversy. On the one hand, some submissions stated that there should be an automatic right of appeal to the ordinary courts on the widest grounds. Others acknowledged that rights of appeal to courts undercut the fact-finding function and expertise of the Board.

Unlike many administrative tribunals, there is an open right of appeal to the Court of Appeal from the Expropriation Compensation Board with leave of the Court. This is not expressly limited to specific grounds such as errors in law. Appeals from the Board are, however, rare, and seldom successful. In fact, leave is likely granted only in those cases where the matter is of considerable public importance or where there is evidence of an error of law.

The Commission recommends that there should be a right of appeal to the B.C. Court of Appeal, but that the appeal should be for errors of law only, including violations of natural justice, and that they should require the leave of the court. A wider scope of appeal is inconsistent with the emphasis placed upon the specialized expertise and experience of the Board.

Participation

Many of the submissions to the Commission argued for the need to devise a better process for land-use decision-making generally. Many suggested that public interest groups should be involved in the dispute resolution process. Industry groups similarly urged that they should have a greater say in the process whereby the takings decision is made. However, the recommendations of this Commission do not deal with land-use decisions generally, but are limited to the narrower issue of compensation.[9] Thus, ordinarily, public interest groups should not have standing in compensation cases. Similarly, because our recommendations are limited to compensation matters only, this Commission does not recommend the application of those parts of the *Expropriation Act* that deal with the expropriation decision, pre-expropriation procedures and inquiries.[10]

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9 The process for public participation in land-use determination is being addressed by the Commission on Resources and the Environment.

10 Section 7.1 of the present Act provides that where the expropriation takes place on Crown land the Lieutenant Governor in Council "may make regulations that are considered necessary or advisable specifying the procedures that are to be followed in carrying out the expropriation in place of the procedures contained in this part."

SUMMARY OF RECOMMENDATIONS

The Commission views compensation policy as one element in an overall transition policy. A good compensation policy should help society redirect resources from one use to another with as few negative side effects as possible. In the process it should satisfy fairness criteria, provide proper incentives to both public and private sector decision makers, and be efficiently implemented. Fairness requires that the burden of takings of property for public use not fall too heavily upon individuals or small groups. The provision of proper incentives means, among other things, that investment backed expectations be protected. Efficient implementation is achieved when all parties can predict the compensation consequences of a taking, and disputes can be resolved expeditiously.

GENERAL RECOMMENDATIONS

1. Through its allocation of private rights to public resources the Crown has created expectations backed by investments. As a result, the owners of mineral and timber interests should be compensated when these interests are taken for a public purpose.

2. The Commission has determined that no useful purpose would be served by legislating a comprehensive definition of "taking." The distinction between interference with a property right and a taking should be mutable to accommodate changed conditions. Therefore the issue should be dealt with on a case by case basis by legislators or, in the final instance, by courts. General principles are suggested to guide legislators and policy makers in determining whether an interference amounts to a compensable taking.

COMPENSATION FOR MINERAL INTERESTS

Investments in mineral properties are generally very site specific. When the site is taken for public use, investments are rendered valueless. Currently, compensation for taken mineral interests is greatly complicated by uncertainty over values of mineral properties, particularly properties in the exploration stage. Furthermore, the rights conferred by the different types of mineral titles do not properly reflect the amount of security required by the investor as the mineral property moves from the exploration to the mining stage. In effect there is very little difference between claims and leases.

3. The *Mineral Tenure Act* should be amended to draw a sharper distinction between claims and leases. A lease should only be granted when the applicant demonstrates the economic viability of the deposit that would justify mining. Where leases are taken back, compensation would be based upon market value. Where claims are taken back, compensation would be based upon costs.

4. In the alternative, the *Mineral Tenure Act* should be amended to address compensation for takings expressly. A distinction should be drawn between exploration properties and development properties. The former should be compensated on a cost basis while the latter should be compensated on a market value basis.

5. Compensation for exploration properties should be based on the reasonable costs of acquiring and holding the claim over the past five years, plus a nominal rate of interest. Compensable costs may be determined partly by drawing from the existing work requirements for Mineral and Placer Claims.

6. Where possible, and at the holder's option, mineral claims that are taken could be exchanged for other rights, supplemented by disturbance damages.

COMPENSATION FOR FOREST INTERESTS

Compensation for forest interests is more complex. In some instances, investments are tied to a single site. If that site is removed the investements are rendered worthless. Many others are not site specific, such as processing facilities which commonly draw from multiple tracts. When the effect of a taking is to reduce, but not eradicate the value of an investment the task is complicated because the extent of the reduction must be determined.

7. No compensation should be paid for forest tenure values that reflect uncollected resource rents. Compensation should be limited to harm done to investments made on the expectation of secure harvesting rights.

8. Where an investment or asset is rendered worthless by reason of a withdrawal compensation should be paid on the basis of its original cost, less real depreciation plus interest. This is likely to occur when the asset is directly tied to the withdrawn lands.

9. Where an investment is not directly tied to the withdrawn forest land, such as a mill, the damage extends over the life of the affected asset. To avoid the wastefulness inherent in rendering assets redundant or incompletely used, efforts should be made to maintain the flow of timber to the facility until it is worn down, obsolete, or can be modified to efficiently use a lower volume of timer.

10. Wherever possible, withdrawals should be accompanied by efforts to enhance the productivity of remaining lands to attenuate the effects of a lowered allowable harvest. Compensation funds could be used for this purpose.

11. When an affected mill purchases logs to make up for a shortfall, compensation should be tied to the difference between the interest holder's own logging costs and the price paid. If alternate sources of timber are not available, compensation should be based on increased costs of operating the mill as compared with production at capacity.

12. Provision should be made for flexible and delayed deletions whereby withdrawals are timed to coincide more closely with the life of the assets. The Crown should identify in advance lands to be deleted and make the deletion decision known to the holder. In order to facilitate such a policy, the recommendations of the 1976 Royal Commission on Forest Resources should be implemented: the replacement and deletion period for TFLs should be reduced to five years and the Crown should have the option of deleting 10 percent of the annual allowable cut without compensation every replacement period. Similar rules should apply to the Forest Licences.

13. Additional flexibility should be built into the response to deletions. In some cases, where investments cannot be easily rearranged to mitigate harm, deletions should be delayed. Any overcutting during the phase-in period would be balanced by a downward adjustment of the allowable harvest in subsequent periods.

DISPUTE RESOLUTION

14. The Expropriation Compensation Board should assume responsibility for dispute resolution in cases involving resource interests. Because these types of cases differ from common expropriations, special procedures should apply. The following reforms are recommended:

(a) the Board should be expressly empowered to encourage consensus-based solutions including the ability to conduct pre-hearing conferences, mediation, assisted negotiation and other forms of alternate dispute resolution;

(b) the system of cost awards should be reformed in order to give all parties an incentive to settle. A tariff of costs should be considered, and cost awards should be denied to unsuccessful claimants and made against unreasonable claimants;

(c) appeals from the Board should be limited to errors of law including violations of natural justice and should require leave of the Court of Appeal;

(d) the Board should be empowered to retain its own experts to undertake investigations, provide reports and advise the Board on all matters relating to the valuation process;

(e) if resource compensation disputes become more frequent, a Resource Division of the Board should be established;

(f) resource compensation disputes become more frequent, expertise in resource issues should be a factor in appointments.

APPENDIX A-1

Resource Compensation Regimes in Other Jurisdictions

APPENDIX A-1

RESOURCE COMPENSATION REGIMES IN OTHER JURISDICTIONS

INTRODUCTION

The Commission contacted numerous lawyers, academics and people in government and industry in other provinces, and in other common law jurisdictions (including Australia, the United States and New Zealand). One of the most striking findings was that many of those contacted stated that while the compensation issue was a live one in their jurisdiction, they had little experience with the matter, and no formal mechanisms in place to resolve the problem. Indeed, numerous jurisdictions are in the process of considering legislative reform in this respect and await the Commission's report.

The lack of a clear common law model is not surprising. The types of land-use conflict and legislative reform that give rise to the resource takings issue are relatively new. Throughout the common law world, in little more than a decade, there has been an extraordinary proliferation of legislation setting the stage for the takings issue. New laws concerning conservation, parks, environmental protection and resource management have grown up around the older legislation governing mineral and timber interests. These new laws will inevitably come into conflict with the older legal framework. We are in a period of profound legal transition.

Some caveats are in order. First, this survey is not comprehensive. In addition to contacting individuals, the Commission surveyed legislation and caselaw in other provinces and countries. Forestry and mining legislation were canvassed as well as, in some cases, legislation touching on parks, conservation and expropriation. In some instances, this report states there is no express provision for cancellation or expropriation of resource interests, or that there is no provision for compensation. Such a statement must be treated with caution. The fact that there is no provision in the resource legislation does not mean there are no such provisions in other legislation not canvassed by the Commission. Examples include legislation affecting parks, environmental protection and development planning.

Second, while there may be no express provision for resource compensation, in many common law jurisdictions it is at least arguable that the relevant expropriation legislation may apply. Whether or not it does will turn on the legal classification of the interest that is taken (especially whether the interest is an interest in land) and whether that interest is included as a compensable interest in the legislation. Indeed, in several jurisdictions, litigation is under way involving mineral interests. Wherever possible, the

Commission has sought to investigate these possibilities, but an exhaustive investigation was well beyond its resources.

Another limitation arises out of the heterogeneous nature of resource interests. Their variety in terms of length and strength in different jurisdictions makes comparisons difficult. There is no necessary definition of property rights in natural resources, and no single compensation system. Thus, there is always the danger that non-comparables are being compared. Nevertheless, the finding of such diversity is itself instructive, and useful lessons may be learned from the comparisons.

GENERAL PATTERNS

While there is no one obviously correct policy on compensation, some generalizations can be made. First, all the jurisdictions canvassed affirm the general principle that takings of property should be compensated. In cases of real property, compensation is based on fair market value, or value to the owner. The compensation principle is enshrined in the constitutions of many countries (e.g., the U.S. and Australia), and in much domestic legislation (especially the various expropriation acts). It is also a principle affirmed in many instruments of international law and in bilateral investment treaties between countries.

However, moving from the general to the particular, the picture rapidly becomes more complicated and compensation regimes much more diverse. There is no clear pattern of compensation for resource interests. Sometimes no compensation is provided. When it is, valuation methods vary.

There are several reasons for the lack of uniformity. As stated, the legal nature of resource interests is heterogeneous. What is considered a protectible property right in one jurisdiction may be a mere permission in another. Generally, resource interests in other jurisdictions tend to be neither as long nor as strong as in British Columbia. Mining claims are quite discretionary in some jurisdictions (e.g., Australia), and are more difficult to acquire in others (e.g., United States). Frequently, such claims may be terminated without compensation In forestry, few jurisdictions have the type of tenures granted in British Columbia. Short term cutting rights are the rule on U.S. public lands, and when a land-use conflict arises they may simply be allowed to expire. If they are taken, the loss to the holder is much less because the duration of the right was shorter. Thus, the compensation issue is less likely to arise with such furor in other jurisdictions.

Where the withdrawal of lands really does interfere with strong and justified expectations of a holder, and a real loss is suffered, compensation is usually (though not always) provided. Where possible, most jurisdictions prefer compensation in kind (e.g.,

replacement licences or alternate supplies). Where this is impossible, monetary compensation is usually provided. There are few explicit legislative regimes; instead, compensation is usually provided individually on an *ad hoc* basis, or as part of a larger economic adjustment plan. In such instances the amount of compensation is frequently more the product of the respective bargaining power of the parties than the application of uncontroversial principles.

Where compensation policy is actually set out in law, or in the terms of agreements, there are two basic models: market value and historical cost. Both models are prominent and have been applied in the case of mineral and timber interests.

ALBERTA

Minerals

Alberta is the only province with a clear, legislated compensation policy for the taking of mineral interests. Minerals in Alberta are regulated by the *Mines and Minerals Act*.[1] Under this Act the Minister may cancel a lease or permit when he is of the opinion that any further exploration or development in an area is not in the public interest (section 8(1)(c)). The operation of the *Expropriation Act* in case of a cancellation is expressly excluded.[2] Instead, compensation issues are dealt with by the *Mineral Rights Compensation Regulation*.[3] The basis of valuation under the Regulation is historical cost. These provisions apply to all "agreements" under the *Mines and Minerals Act*. "Agreements" include any lease, licence, reservation, permit, or certificate. Oil and gas lessees have been treated in a similar fashion.

The *Compensation Regulation* provides for compensation based on out-of-pocket expenditures alone (plus interest on money spent in the previous ten years). Compensable expenditures include acquisition fees, rentals, and money "fairly and reasonably expended... in the exploration for, and development of minerals in the location." Allowances are sometimes made for overhead. No compensation is provided for resources established or discovered, as these remain the property of the Crown. No compensation is paid for any expenditures incurred after the holder has received notice of cancellation. The Ministry takes the position that the scheme set out in the regulation is a fair balance between security of tenure and the Crown's desire to maintain flexibility.

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1 R.S.A. 1980, c. M-15, as am. (see especially, *Mines and Minerals Amendment Act*, S.A. 1983, c. 36).

2 S.A. 1981, c. 48.

3 Alberta Reg. 161/78, as am. by 281/78, 425/82.

Eligibility for compensation is confined to clear takings or "interdictions" by government. The Task Force that developed the policy considered, but rejected, application of the policy to regulatory takings; i.e., regulatory requirements that make development more expensive or uneconomic.[4]

Considerable amounts of land have been withdrawn in order to protect natural values on the eastern slopes of the Rocky Mountains. In developing management plans, efforts have been made to minimize impacts on existing lessees and on known resources to which access should be retained. Indeed, the Task Force assumed that the policy would not be applied in areas from which minerals are actually being produced. Nevertheless, resource holders have been affected. Since 1978, some 69 claims for compensation have been received. Compensation payments have totalled about $21 million for 140,000 hectares of land.

Forests

Timber interests in Alberta are regulated by the *Forests Act*.[5] Crown timber is disposed of primarily by forest management agreements (FMAs), timber permits, and timber quotas The latter two interests are less secure than the former. The holder has no property right to the trees until they are cut, and government retains considerable discretion to modify the holder's rights. Section 19 of the Act deals with amendments to the quota for the purpose of maintaining "a proper balance between growth and depletion of timber." The Minister may alter volumes or areas of land. No compensation is provided for in the case of a reduction under this section. Section 26 of the Act also reserves a wide power to the Minister to change, alter or cancel the terms of quotas, licences and permits in the public interest. Where the cancellation is not based on default, the Minister may pay compensation to the holder "in an amount which the Minister considers just." (section 27). Note that this language is permissive rather than mandatory.

Interestingly, section 28 of the Act expressly states that holders of timber quotas and timber permits do not acquire any right or interest in the land. The holder of a timber licence or timber permit becomes the owner of the trees only after they are cut. Presumably, this means that Alberta's *Expropriation Act*[6] does not apply to these interests, though the matter has not been litigated. And while third parties who interfere

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4 Task Force Report on *Compensation Policy for Loss of Mineral Rights* (Alberta, 1976).

5 R.S.A. 1980, c. F-16. See Nigel Bankes, *Crown Timber Rights in Alberta*, (Calgary: Canadian Institute of Resources Law, 1986), Andrea Moen, *Demystifying Forestry Law: An Alberta Analysis*, (Edmonton: The Environmental Law Centre, 1990).

6 R.S.A. 1980, c. E-16 (the Act applies to expropriations of "land").

with the right to cut must pay compensation, the Crown need not do so (section 28(4)). In any event, the policy in Alberta with respect to withdrawals is to provide replacement timber. The Ministry of Forests, Lands and Wildlife reports that it has had no experience with cash-based compensation.[7]

The major forest tenure in Alberta is the forest management agreement (FMA) which is analogous to British Columbia's TFLs. The holder is said to be the owner of the trees except as against the Crown (Section 16(2)). Forest management agreements have a term of 21 years with a right of renewal subject to cabinet approval. Nothing is said about the consequences of a failure or refusal to renew, though one natural resource lawyer has concluded that there cannot be said to be a "right" to renew.[8]

Section 16(2) of the Act deals with disputes between holders and other users of the forest area. It provides for compensation to the holder from anyone who causes loss or damage to timber or improvements, though this section expressly exempts the Crown from liability. Compensation for damage to forest areas is based on replacement cost.

The terms of the FMAs themselves provide for withdrawal, cancellation and compensation. The Minister has wide discretion to withdraw lands from an FMA area. Withdrawals may be made for a number of purposes, including environmental protection and the establishment of commercial or industrial facilities.[9] The general pattern of compensation is as follows:

(a) Where the withdrawal is for disposal to a private party, that party must compensate the holder for loss or damage to the holder's operation, including lost profits. In some cases, losses are calculated by utilizing the Department's stand damage appraisal table.

(b) Where the withdrawal is for Crown uses, but consists of less than a certain percentage of the area (1 to 3 percent), there is compensation for actual loss to improvements, but not including any lost profits, inconvenience or increased costs.[10]

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7 Written communication from the Minister of Forestry, Lands and Wildlife, June 1992.

8 Bankes (1986).

9 See, for example, The Daishowa FMA, s. 6, reprinted in Andrea Moen (1990) appendix 5.

10 Bankes (1986), p. 98.

(c) Where the withdrawal is of more than the specified percentage, the Minister is required to calculate compensation for the excess. This compensation takes into account both direct and indirect losses,[11] including damage to the operations of the holder. Another agreement (in respect of deciduous forests) provided no compensation for withdrawals, but replacement where more than 5 percent of the area was removed. Variations in the terms of these agreements likely reflect the bargaining power of the parties, taking into account economic conditions at the time the agreements were negotiated, the nature of the timber and the size of the companies.

Most agreements provide that any compensation paid is to be put in a separate interest bearing trust account and that the funds may be used only for purchasing alternate logs or wood chips, or for intensive forest management.

In cases of surface right disputes between holders of FMAs and other private parties, the dispute may be taken to the Surface Rights Board for the purpose of determining compensation.[12] This Board makes orders regarding rights of surface entry for mining, pipelines and transmission lines. The Board does not, however, deal with disputes between private parties and the government arising out of licence cancellations or withdrawals on Crown land.

MANITOBA

Minerals

Mineral rights in Manitoba are regulated by the *Mines Act*, as recently amended by the *Mines and Minerals Act*.[13] The legislation provides a three tier system consisting of exploration permits (right to explore), claims (right to explore and develop) and leases (right to produce). The holder has the right to move up from one tenure to the next, subject to the holder's compliance with reporting and work requirements. If a claim holder has not complied with the work requirement, a lease may be obtained only where the holder proves discovery of a valuable ore body and the intent to commence production (section 104). The leases run 21 years and are renewable unless mining has

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11 Bankes (1986), p. 98.

12 See the *Surface Rights Act*, S.A. 1983, c. S-27.1.

13 The *Mines Act*, R.S.M. 1987 c. M-160 as am. by *Mines and Minerals and Consequential Amendment Act*, S.M. 1991-92, c. 9.

not been commenced, or has terminated. In such cases the Minister has discretion to renew the lease, or the holder may apply to convert the lease back to a claim.[14]

Lands may be withdrawn from prospecting, or restricted, subject to regulations. The Minister may also cancel mineral access rights on which a claim or lease is located (section 144(1)). This may be done for a variety of public purposes. There is no express provision for compensation.

The Department of Energy and Mines in Manitoba reported that no compensation has been paid to resource interest holders on account of non-voluntary reductions or cancellations. However, mineral interests have occasionally been surrendered through negotiations in order to facilitate native land claims agreements. In such cases, the holder has been reimbursed his or her staking costs. There is no explicit legislation on the matter.

The new Act creates (or reconstitutes) the Mining Board to resolve a wide variety of disputes. The Board is staffed by independent persons, most of whom have some expertise in mining. The Board resolves disputes between holders, between holders and government, and between holders and surface owners. The Board may help parties resolve disputes through assisted negotiations and mediation. It may retain outside experts. The Board's orders are final and may be appealed only where there has been a violation of natural justice, an excess of jurisdiction, or an error of law.

Forests

Forests in Manitoba are regulated under the *Forest Act*.[15] Cutting rights are disposed of by public competition or negotiation. Longer term tenures are granted through renewable forest management licences for up to 20 years. Such licences vest ownership of the trees in the licencee, except as against the Crown (section 18(4)). Licences are subject to mineral rights, but the licencee is entitled to compensation from anyone who cuts or destroys trees in the course of mining (section 20). A forest management berth is the area for which a forest management licence is granted. Section 15 of the Act provides that the Minister may withdraw any portion of a forest management berth or timber sale where he is of the opinion that it is unnecessary for the working of the remainder of the berth or sale. Nothing is said at compensation. The Act provides that the Minister may negotiate for the surrender of a timber berth "on the basis of a cash settlement or on such other terms as he may consider advisable." (section 22).

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14 Provisions regarding renewal and cancellation appear in section 110.

15 R.S.M. 1987, c. F-150.

NEW BRUNSWICK

Minerals

In New Brunswick, the *Ownership of Minerals Act*[16] enabled Cabinet to declare public ownership of minerals and to set the terms of compensation, if any. The purpose of this legislation was to clarify uncertainty of mineral ownership in certain areas, in order to encourage exploration. Previous owners (of minerals granted with land) are entitled to compensation. In practice, compensation is calculated on the basis of a percentage of any royalty or mining tax payable to the Crown if mineral production ever occurs. This legislation does not apply to existing mineral tenures under the *Mining Act*.[17]

Mineral claims in New Brunswick are different from those in British Columbia. The right to move up to a lease from a claim is more discretionary and the holder of the claim must satisfy the Minister of a number of conditions.[18] In general terms, the applicant must establish that the claims are in good standing and are necessary for the mine. Discovery of an ore body and intentions to commence mining must be proven. The applicant must submit a feasibility study and other information. Proof of performance of work requirements must be made and security for reclamation and environmental protection and rehabilitation must be provided. The requirements for the feasibility study are set out in detailed regulations.[19]

New Brunswick has had at least one experience regarding expropriation and valuation of a mineral claim. The case arose out of an expropriation of land for an industrial park. It was held that mineral claims (silica) on the land were an interest in land, and were therefore to be compensated pursuant to the provincial *Expropriation Act* (i.e., compensation based on market value).[20] Subsequently, the case returned to court for the purpose of valuation.[21] The judge expressed dissatisfaction with the evidence, and noted the speculative nature of the valuation exercise (even though there was an acknowledged deposit of a substantial size). Like other judges he commented that the

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16 R.S.N.B. 1973, c. O-6

17 *Mining Act*, S.N.B. 1985, c. M-14.1, s. 135(2).

18 *Ibid.*, s. 68, as am. S.N.B. 1989, c. 25.

19 New Brunswick Regulation 86-98, O.C. 86-515, s. 29.

20 *Province of New Brunswick v. Gordon* (1979) 19 L.C.R. 29, 27 N.B.R. (2d) 110 (N.B.Q.B.).

21 *Gordon v. Province of New Brunswick* (1988) 39 L.C.R. 289; affirmed (1989) [44 M.P.L.R. 27, C.A.].

"estimate of value was to some extent in the nature of a guess." Nevertheless, given the legislative framework, he was obliged to apply the *Expropriation Act* principles. He rejected the three expert valuations (ranging from $45,000 to $1 million) and settled on a figure of $75,000.

The New Brunswick *Mining Act* was amended in 1986 by adding a section stating that the *Expropriation Act* is "superseded."[22] The effect would appear now to require a search for a right to compensation within the *Mining Act* itself. There is no express right. Sections 87 and 88 deal with a lessee's right when a lease is cancelled, but provide only that the lessee may remove equipment and machinery.[23]

In New Brunswick, the Mining Commissioner has the jurisdiction to resolve certain disputes. While not expressly empowered to deal with compensation matters, the Commissioner has jurisdiction to determine "all questions or claims" arising out of the Act, including disputes relating to "the cancellation of prospecting licences, mineral claims or mining leases..."[24] and "respecting the rights, privileges, obligations or duties of prospectors, holders of mineral claims or mining leases conferred or imposed under this act."[25]

Forests

Timber tenures in New Brunswick are regulated by the *Crown Lands and Forests Act*.[26] In 1982 all old licences were cancelled without compensation, and replaced with new licences which were subject to the right of the Minister to change their terms, conditions and boundaries (section 22). Currently, timber licences have a term of 25 years, renewable every 5 years, subject to management performance. Sub-licences have a 5 year, evergreen term. Both timber licence holders and sub-licencees must not only own or control a timber processing facility, they must also reach agreement with the Minister on maintaining specified levels of plant capacity. Timber permits, which have a 1 year term, authorize the holder to cut Crown timber. They specify price, species, volume and time.

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22 *Act to Amend the Mining Act*, S.N.B. 1986, c. 55, s. 2.

23 The *Expropriation Act* is also superseded by the *Ownership of Minerals Act*, s. 1.1.

24 Section 13(1)(n).

25 Section 13(1)(o).

26 S.N.B. 1980, c. C-38.1.

The statute provides that the Minister may withdraw any portion of a timber licence area for the purpose of establishing ecological reserves, parks, or other public objects.[27] The decision must be made with due regard for the licencee's and sub-licencee's need for timber supply, and must be approved by the Lieutenant Governor in Council. Section 37 provides for compensation for withdrawals or licence cancellations. Compensation is at the discretion of the Minister, and only improvements are explicitly identified as an item to be considered.

> The Minister may, with the approval of the Lieutenant Governor in Council... (b) pay compensation for forest roads, bridges and similar capital improvements made to Crown lands described in a licence that have been withdrawn or disposed of pursuant to this Act in such amount, if any, as the Minister determines the licencee should fairly be compensated.

NOVA SCOTIA

Minerals

A relevant experience from Nova Scotia concerns the uranium exploration and mining moratorium of 1981. The moratorium has recently been extended to 1995. Existing (one year) uranium licences were not renewed and no new licences were issued. Exploration and development rights were essentially terminated. No compensation was ever paid to licence holders and no actions were brought against the government of Nova Scotia.

The uncompensated uranium closure was prior to the Supreme Court's decision in *R. v. Tener*.[28] Some previously closed areas have been re-opened for other forms of mineral exploration. Previous rights holders in these areas were given rights of first refusal.

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27 Originally section 35, repealed by *Act to Amend the Crown Lands and Forests Act*, S.N.B. 1983, c. 24, s. 17 and also by *Act to Amend the Crown Lands and Forests Act*, S.N.B. 1984, c. 21. The effect of the amendments was simply to generalize the withdrawal power to any purpose in the "public interest." Timber licence areas can be increased or decreased, boundaries can be altered, areas can be reallocated among licencees or allocated to other persons for non-licence purposes.

28 (1985), 17 D.L.R. (4th) 1.

ONTARIO

Minerals

Minerals are regulated by the *Mining Act*.[29] Formerly, provision was made for application for a patent of mining rights which vested the lands and minerals. However, this section was recently repealed in favour of a system of renewable leases.[30] Now, a claim may be converted to a lease which is valid for 21 years. Leases will not be renewed unless, in the previous period there was more than one year of continuous mineral production or the owner at least made reasonable efforts to bring the mine into production.[31]

Another recent amendment provides that recording a mining claim does not confer any right, title, or interest or claim in or to the mining claim other than the right to obtain a lease, and that,

> prior to the performance, filing and approval of the first prescribed unit of assessment work the person is merely a licencee of the Crown and after that period and until he or she obtains a lease the person is a tenant at will of the Crown with respect to the mining claim...[32]

Mining activities are prohibited in parks, except in accordance with regulations, and the Minister may withdraw lands. The statute does not address the compensation issue, though if mining rights are cancelled the licencee has the right to remove structures and chattels from the area.[33]

Forests

Forests are regulated pursuant to the *Crown Timber Act*.[34] Cutting rights are disposed of by tender and may be renewed (according to regulation). It is a matter of debate whether a refusal to renew a licence requires compensation. Section 28 states that Cabinet "having regard to reasonable business requirements of the licencee, may cancel

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29 *Mining Act*, R.S.O. 1990, c. M.14.

30 *An Act to Amend the Mining Act*, S.O. 1989, c. 62, s. 61.

31 Section 81(8).

32 *An Act to Amend the Mining Act*, S.O. 1989, c. 62, s. 37, now section 50.

33 Section 53.

34 R.S.O. 1990, c. C.51.

or vary any licence, in respect of one or more parts of a licence area, or in respect of any type, size or species of timber designated by him..." The statute is silent as to compensation.

Sustained yield operations are carried out on the basis of forest management agreements (which are included in the definition of "licence"). These agreements are exempted from the operation of section 28. However, no form of licence may be assigned, pledged or charged without the Minister's consent. Where that consent is requested the Minister may simply cancel the licence where he or she is of the opinion that the cutting operations or improvements have not been adequate. Again, nothing is said about compensation.

QUEBEC

Minerals

Mineral tenures in Quebec are defined and allocated in the *Mining Act*.[35] As in New Brunswick, the right to move up from a claim to a lease is not automatic. Instead, the holder must "establish the existence of indicators of the presence of a workable deposit."[36]

Under the Act the Minister may suspend work on a claim on the basis that the land should be put to a public use.[37] After six months the Minister must decide whether the suspension is to be maintained and if so, the claim is expropriated. This provision applies only to claims. There is no equivalent provision regarding mining exploration licences or mining leases. The Minister may, in the public interest, reserve or withdraw any lands from staking, exploration or mining operations. This includes the creation of parks.[38]

Government practice in the case of withdrawals is to reimburse the cost of work and taxes since the holder acquired the title, but not to value future income. No compensation is paid when the title is revoked for cause, abandoned, or where renewal is refused. Because the claims that have been expropriated in the past have had little value, the government practice of providing only cost-based compensation has not been

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35 *Mining Act*, R.S.Q., c. M-13.1.

36 *Ibid.*, s. 101.

37 *Ibid.*, s. 82.

38 *Ibid.*, s. 304.

challenged. Mineral interests are defined in the *Mining Act* as "immovable real rights" which are subject to compensation under the *Expropriation Act.*[39]

Forests

Under the old Quebec *Lands and Forests Act*, timber limits could be cancelled.[40] Where the holder had a wood processing plant, compensation took the form of replacement timber, and an indemnity for the residual value of "permanent works, inventory, management and survey work, and other improvements." Because the holder was entitled to replacement timber, any monetary compensation was reduced by the remaining undepreciated capital cost of works and improvements that would continue to be used. The method of valuation was set by regulation.[41] Residual value was the present value of the improvements at the time of cancellation, less a fixed installment depreciation applied over a specified number of years (variable depending upon the nature of the work).

In 1987 new legislation was put in place and all old tenures were cancelled.[42] Tenure holders were either granted new tenures or compensated. Many cancellations were effected under the old provision referred to above and therefore were replaced or compensated. But section 228 provided that other cancellations would not be compensated. However, if the cancelled timber limit "has been granted in exchange for land and constructions in full ownership of the timber limit holder and transferred by him to the public domain" then the holder is entitled to a fair indemnity. In calculating the indemnity the Minister was directed to "take into account, by discounting them, the value of the land and constructions on the date of the deed of exchange and the value of the consideration received by the timber limit holder for the exchange."

The primary tenure under the new Quebec *Forest Act* is a Timber Supply and Forest Management Agreement (TSFMA), held by operators of wood processing plants. The contract is for 25 years, extended by five years every five years. Section 50[43] of the Act provides that the lands allocated in the TSFMA may be modified every five years. Deletions may also be made during the five year terms by the application of other

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39 R.S.Q., c. E-24, s. 19.

40 *Lands and Forests Act*, R.S.Q. 1977, c. T-9, s. 93. The dispute resolution process was a modified form of the process that was used for takings for the creation of forest lands, set out in S.Q. 1951/52, c. 38.

41 Quebec Revised Regulations 1981, reg. T-9, r.12.

42 *Forest Act*, F-4.1, S.Q. 1986, c. 108, ss. 213-215.

43 Section 50, as am. S.Q. 1990, c. 17.

legislation, or to comply with land management plans under public land laws.[44] In such cases the Minister shall, if forest production is sufficient, substitute equivalent areas for the deletion. The Minister is also obliged to pay "equitable compensation" for any previously authorized (and wasted) management activities that were carried out in the deleted area. There have been no withdrawals calling for the application of this section.

The terms of TSFMAs (including volumes and areas) may be adjusted every five years. Section 77 identifies the factors that the Minister is to take into account. They include changes in requirements, alternative timber availability, new data on the forest inventory or biophysical characteristics of the areas and past forest management activities. Revisions do not entitle the holder to any compensation, though the holder may arbitrate the revision.[45] If the arbitrator finds that the revision was not justified, it may be altered or compensation may be awarded according to a method defined by the arbitrator.

SASKATCHEWAN

Minerals

There is currently no legislation regarding the extinguishment of mining rights. However, the Director of the Mines Branch reports that amendments to the *Crown Minerals Act*[46] will give Cabinet the power to cancel leases for environmental reasons. These amendments have passed third reading and await royal assent. Regulations will be drafted to establish a process for dealing with compensation. As in Alberta, compensation will be calculated on the basis of actual reasonable costs incurred by the holder. The formula will exclude opportunity costs.

Forests

Timber interests are created by the *Forest Act*.[47] Long term timber interests are allocated by forest management licence agreements. As a matter of policy, where a withdrawal has an adverse effect upon the holder of an FMLA, the Minister may replace the lands, or pay compensation for all loss and damage. The amount of compensation is

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44 *Act Respecting Lands in the Public Domain*, c. T-8.1.

45 Section 78.

46 S.S. 1984-85-86, C-50.2.

47 *Forest Act*, R.S.S. 1978, F-19, as am. S.S. 1986-87-88 c. 43.

negotiated and, failing agreement, the FMLA provides for arbitration.[48] In the case of areas that are not covered by an FMLA, no compensation is paid for withdrawals.

National Parks

Under the previous legislation, land or interests in land could be purchased, acquired or expropriated for national parks, and the *Expropriation Act* was expressly said to apply.[49] Similarly, restrictions can be placed upon activities in National Parks that make resource exploitation impossible. There have been two significant withdrawals resulting in compensation to holders of mineral interests. Compensation was essentially confined to costs.

Parks Canada dealt with mineral tenures (placer mines) in Kluane National Park by providing compensation based on expenditure plus an incentive bonus. The guidelines utilized provided for compensation for expenses incurred in the acquisition and development of the mining rights, plus an incentive bonus of up to 20% the net amount of those costs. Specifically, the order in council provided two alternate modes of settlement:

(i) Compensation would be made for the expenses incurred in the acquisition, proving and development of the mineral rights (but not including the operation costs of a producing mine) less any monies received from the Federal Government through cost sharing assistance plans, plus an incentive bonus of up to 20% of the net out of pocket expenses of the claim holder;

(ii) the claim holder would be allowed to carry out additional work to prove his claim on the understanding that he would not be eligible in the future for compensation referred to in (i) above, nor would he be eligible for any form of government development assistance.

Because studies emphasized the ecological fragility of the area, the latter method of settlement was considered to be undesirable and was discouraged.

A similar approach was utilized in connection with placer claims in the Northern Yukon National Park. Fifty-three placer claims were purchased in 1986. Compensation

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48 Written communication from the Minister of Parks and Renewable Resource, May 12, 1992.

49 *National Parks Act*, R.S.C. 1985, c. N-14, s.6; repealed and replaced in 1988 by R.S.C. 1985, c. 39 (4th Supp) s.4: "The Governor in Council may authorize the Minister to acquire otherwise than by expropriation any lands or interests therein for the purpose of enlarging a park, or establishing a new park and to purchase, expropriate or otherwise acquire any lands or interests therein for other park purposes."

was based on reimbursement for the loss of income in the year of acquisition, compensation for lost capital expenditure (equipment), plus a 10 percent "lifestyle bonus" on those costs.

AUSTRALIA

In Australia the states have primary jurisdiction over natural resources. However, the Commonwealth government also plays an active role, especially when it comes to withdrawing land for conservation purposes. Very large areas of Australia (an estimated 23 percent) have been withdrawn from mineral exploration and development.[50] Many of these are the large wilderness areas sought to be protected as World Heritage Sites, national parks and land under Aboriginal control. It is necessary, therefore, to consider compensation policy at both levels of government.

The Commonwealth

The Australian constitution gives Parliament the power to make laws with respect to the "acquisition of property on just terms from any State or person..." Unlike the American constitution, this clause rarely gives rise to regulatory takings challenges because the clause requires an `acquisition.' So, in the *Tasmanian Wilderness* case, the federal prohibition of development in the Tasmanian wilderness was held by the courts not to be a taking of property, but only a regulation.[51] Also, unlike the United States, "just terms" refers to fairness, and while ordinarily requiring compensation, does not necessarily require individualized compensation in "full money equivalence."[52] The State constitutions do not contain a property right, though they all have legislation which does provide compensation in expropriation cases.

The takings issue has arisen in Australia, but has not been litigated with finality.[53] The issue arises most frequently at the Commonwealth level when the government exercises jurisdiction over state-owned property in order to protect areas nominated as World Heritage Sites or otherwise set aside for conservation reasons. In these cases there

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50 Estimate of the Australian Mining Industry Council, *Shrinking Australia - the Problem of Access to Land* (Canberra, 1988), cited in Michael Hunt, "Government Policy and Legislation Regarding Mineral and Petroleum Resources," *Australian Law Journal*, vol. 62 (1988) 841, p. 846.

51 *Commonwealth of Australia v. Tasmania* (1983), 46 A.L.R. 625.

52 P. H. Lane, *Manual of Australian Constitutional Law* (Sydney: The Law Book Company, 1987), p. 170.

53 No government agencies contacted could provide examples of takings litigation in the natural resource field and a search of the law reports turned up no cases.

is no set formal policy (according to the Nature Conservation Branch of the Ministry of Arts, Sport and Environment). The government takes the position that it is not legally obliged to compensate resource holders, though it may negotiate *ex gratia* redevelopment packages. In the Coronation Hills case, which is ongoing, gold mining was banned by the Commonwealth government when the land on which the mines were located was acquired for Kakadu Park. No compensation was paid to the lease holders who are now suing the government. The government takes the position that the prohibition on mining is a planning control only and that compensation is not required.[54]

Notwithstanding uncertainty and debate concerning the legal position, compensation packages are negotiated for interests affected by large scale withdrawals. There have been several major instances of compensation for the withdrawal of lands. The first concerned the Wet Tropics of Queensland. Here a compensation package was developed to provide adjustment assistance to workers, sawmills and closely related businesses. Funds were provided for retraining, job creation and early retirement for workers. Compensation to industry was based on the reduction in value as a going concern, or took the form of retooling assistance. Similar arrangements were made in the case of Fraser Island.[55]

In the case of the Tasmanian wilderness, while the courts held there had been no taking, a negotiated compensation package was also developed. This package took into account losses to timber interests, but apparently did not provide any compensation in respect of the termination of mineral exploration. The agreement between the Commonwealth and the state provided that the former would contribute $50 million towards the adjustment package for retraining and plantation development to offset the loss of old growth supply.

While the Commonwealth took the position in all of these cases that there was no legal obligation to compensate, and that the payments were therefore *ex gratia*, in cases where private property and leasehold land are acquired, there is a legal obligation to compensate at market value.

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54 The Commonwealth has a national *Land Acquisition Act, 1989*, Cth. S. 1989, No. 15. Its provisions bind the Commonwealth and the Territorial Crown and provides compensation for takings of interests in land. "Land" includes legal and equitable interests and also "any restriction on use of land plus any other rights, charge, power or privilege over or on land." (section 6).

55 Department of the Arts, Sport, The Environment, Tourism and Territories, *Annual Report, 1990-91* (Canberra: Australian Government Publishing, 1991).

The States: Minerals

Each state has its own mining legislation and the law is not homogeneous, but some generalizations may be made. First, the Crown in all states has reserved ownership of all minerals on public and private land.[56] Most states anticipated that this action might be construed as a taking and expressly provided for it (usually by denying compensation). In particular, some earlier grants of land had conveyed title to minerals, but that title was resumed by the Crown. This legislation essentially provided for expropriation. For example, the Tasmanian *Mining Act* retroactively nullified any grant of oil and atomic substances, which are now deemed always to have been the property of the Crown. No compensation is provided.

The Victoria legislation provides that all minerals vest in the Crown.[57] The Act expressly precludes a general right of compensation, though the former owner could apply for an exemption from the vesting. Where the former owner had actually paid for the rights, and taken steps indicating an intention to mine, the Minister could order compensation at an amount set by the Minister. In no event could compensation exceed the amount paid by the holder for the minerals, or the investment in mining operations lost as a result of the taking. The South Australian regime is a little different. Minerals were vested in the Crown, but where a person has been divested of mineral rights, the affected area becomes a "private mine," if the area is mined within three years of the declaration of Crown ownership.[58] This effectively 'grandfathered' mining operations that were imminent. Previous owners would also be entitled to royalties should mining commence on their property.

The second generalization is that mineral tenures in the states are somewhat less secure than in Canada. In particular, policies regarding cancellations, non-renewals and withdrawals ordinarily range from a position of no compensation, to reimbursement of costs only.

As in Canada, each state has a two or three stage system, involving exploration rights and production rights. Security of tenure varies from state to state. In most states (with the exception of Western Australia), the holder of an exploration licence does not have the right to obtain a mining lease.[59] The substantial retention of ministerial

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56 See Michael Hunt, "Government Policy and Legislation Regarding Mineral and Petroleum Resources," *Australian Law Journal*, vol. 62 (1988) 841; Michael Crommelin, "Mining and Petroleum Titles," *Australian Law Journal*, vol. 62 (1988) 863.

57 *Mines (Amendment) Act, 1983*, Victoria Acts of Parliament 1983, No. 9936, s. 45.

58 The *Mining Act, 1971*, S.A.S. 1971, ss. 16 and 19.

59 Crommelin (1988), p. 867.

discretion at both the exploration and mining stages has led some commentators to conclude that the system of entitlements is based more on "the exercise of ministerial and departmental discretions rather than a system of the possession of an unassailable right to property."[60] For example, in Queensland, the holder's right is simply a statutory permission. The refusal to grant a lease does not give rise to a right to compensation, even though the language of the permit may appear to grant a right to a lease.

One example of the regime in Queensland is the *Cudgen Rutile* case.[61] The appellants had been granted statutory-based authorities to prospect by the Minister. They carried out extensive prospecting, made discoveries of valuable minerals and applied for mining leases. Objections were lodged with the Minister by persons concerned to preserve the environment in the region and the government refused to grant the leases. The miner sued on the basis that the contractual authority under which it carried out its prospecting expressly provided that the holder had a right to acquire a mining lease. The Privy Council refused any remedy. The Minister, said the court, was not obliged to grant the lease (and could not bind himself in advance), and had discretion over its contents. The authorities gave the appellants no legal rights to enforce.

Some states have three stage systems including claims, retention leases, and mining leases. Generally there is no right to move up from a claim to a retention lease (with the exception of the Northern Territory), nor from a retention lease to a mining lease.[62] Some states do, however, provide for some compensation in the case of a refusal. In the Northern Territory of Australia, the *Mining Act*[63] provides compensation based on reasonable costs. Section 65 states that:

> ...where the Minister refuses to grant a mineral lease in respect of an exploration retention licence area held by the applicant or any part of that area, he shall pay to the applicant such amount as he thinks reasonable to compensate the applicant for his exploration and development evaluation expenses in respect of the land to which the refusal relates while that land was held under the exploration retention licence, plus an amount calculated as prescribed as compensation for the loss of interest by the applicant on that amount.

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60 J.W.K. Young, "Problems in the Creation, Transfer and Registration of Legal and Equitable Interests," *A.A.M.P.L.A. Journal* (1982), 543, at 551, cited in Hunt (1988), p. 859.

61 *Cudgen Rutile (No. 2) Pty v. Chalk*, [1975] A.C. 521 (P.C.).

62 Crommelin (1988), p. 866.

63 *Mining Act, 1980*, Laws of the Northern Territory 1982, No. 15.

This section applies to "exploration retention licences" which give the licencee the exclusive right to carry out exploration and development of the claim up to the point of mining. These licences are 'midway' between a claim and a lease, providing for evaluation of the claim after discovery, but before production.[64] A similar regime applies in South Australia in respect of exploration licences which, while different from claims, do grant to the licencee the exclusive right to explore an area.[65]

In the state of Victoria, mineral interests are regulated by the new *Mineral Resources Development Act, 1990*.[66] The Crown owns the minerals while in the ground. Exploration and mining licences are the most significant tenures in the Act. Registration of a licence confers upon the licencee a proprietary interest in the land (section 70). Section 7 provides that the Minister may exempt land from being subject to licences, for reasons including environmental protection. The right to obtain an exploration or mining licence depends upon the exercise of considerable ministerial discretion, as does the right to renew. Indeed, the statute expressly provides that the Minister may refuse to renew even though the licencee has complied with all requirements. Compensation is not provided.

Perhaps for greater certainty, the state's expropriation legislation expressly provides that compensation is not available. The *Lands Acquisition and Compensation Act* defines "interest" in land broadly enough to cover most resources interests.[67] However, section 38 of that Act also provides that a licencee under the *Mineral Resources Development Act* "is not entitled to compensation for the value of any mineral in or under the surface of any acquired land."[68] The same section further confirms that the terms of licences themselves may provide for the Governor in Council to resume land without compensation to the licencee if it is required for public purposes.

Mining in New South Wales is administered under the *Mining Act*.[69] Section 36 of the Act deals with cancellation of claim registrations (which give the holder the

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64 Crommelin (1988), p. 866.

65 *Mining Act, 1971*, S.S.A. 1971, No. 109, ss. 33(4) and (5).

66 Victoria Acts of Parliament, 1990, Act No. 92.

67 Victoria Acts of Parliament, 1986, Act No. 121. Section 3 defines an interest in relation to land as a "legal or equitable estate or interest... or an easement, right, charge, power or privilege in, under, over, affecting or in connexion with land."

68 Victoria Acts of Parliament, 1986, Act No. 121, s. 38 as am. by the *Mineral Resources Development Act, 1990*, Victoria Acts of Parliament, 1990, Act No. 92 (consequential amendments).

69 *Mining Act, 1973*, S.N.S.W. 1973, No. 42, as am.

exclusive right to prospect and mine). Cancellation may be for default and also when the land is required for public purposes. Under section 75 the Minister may cancel exploration and mining licences. For the longer tenures such as mining leases, only the Governor may cancel. Subsections 75(10) and (11) specify that compensation will not be paid, except for mining improvements on a mining lease. The amount is set at the Minister's discretion.

Multiple Use Regimes

Many states have sought a multiple use compromise with respect to mining and parks. In Western Australia exploration may take place in national parks (with the consent of the Minister of Mines and the Minister responsible for the national park). But mining may not take place without the consent of Parliament. New South Wales provides another example. Under the *National Parks and Wildlife Act*[70] land may be reserved by the proclamation of the Governor. Section 39 provides that upon reservation, no interest (authority, licence of occupation, permit or lease) may be renewed or extended without the Minister's approval and is subject to new conditions. The provision exempts mining interests, to which the *Mining Act* continues to apply. However, any application for new mining interests within a park must be laid before both houses of Parliament (section 41). Forestry interests in park-reserved lands and "aboriginal areas" are treated with less deference. The *Forestry Act* does not apply at all (s. 42), though these old interests continue to exist until their term expires. Thus, the policy in New South Wales with respect to parks would appear to be one of phasing out the old interests. Similar multiple use regimes obtain in South Australia.[71]

The States: Forests

Like mining, forestry is largely a state responsibility. The significance of forests varies dramatically by state. The following table provides a rough outline of the amounts of forest land and the percentage of state ownership.[72]

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70 S.N.S.W. 1974, No. 80 as am., s. 33.

71 *National Parks and Wildlife Act 1972*, S.A.S. 1972, No. 56: Crown lands reserved by Governor's proclamation (ss. 27, 28) and leases or licences granted prior to proclamation continue to expiry (s. 35). But the Minister or interest holder can, by agreement, attach conditions or limit the exercise of rights (s. 40). With respect to mining interests, proposals to alter the boundaries of reserves must be referred to the Minister of Mines (s. 43) and must be approved by the Minister of Lands. The Minister of Mines may approve a mining interest in a reserve, but only with the approval of the Minister of Parks.

72 Statistics for 1989 from Australian Bureau of Agricultural and Resource Economics, *Australian Forest Resources, 1989* (Canberra: Austr. Gov't Publishing, 1990). Percentages are rough approximations, given that actual statistics were acreages.

Table A - 1

Forested Area and State Ownership of Forests: Australia

Jurisdiction	Forest Land	State Ownership
New South Wales	19%	66%
Victoria	24%	47%
Queensland	7%	90%
Western Australia	1%	90%
South Australia	0	---
Tasmania	42%	90%
Territories	10%	60%

In New South Wales, forestry is governed by the *Forestry Act.*[73] A Forestry Commission administers state forests and forest reserves, and section 15 empowers the Governor to purchase, resume, or appropriate land for a forest reserve. Under section 25, any such setting apart of land does not affect any existing lease or licence, except that it may only be renewed subject to conditions set by the Commission. Section 25(a) allows the Governor to set aside areas as flora reserves to preserve native fauna. No operations are allowed in these areas except in accordance with special working plans. Tenures are divided into licences (10 years) and leases (1 year). Leases may also be granted for grazing for 20 year terms. There are no express provisions relating to compensation for cancellation.

Tasmania is the state with the most timber. The Forestry Commission states that it does not, as a matter of law, pay compensation when a timber resource is removed from industry. However, where the removal is caused by Federal authorities (as in the case of the Tasmanian wilderness), the state may receive and administer the federal adjustment grants. Where the forestry interest is affected by action of the state alone, the state may negotiate *ex gratia* payments. The Forestry Commission is willing to negotiate cost-based compensation with individual companies where the company has invested in roads in the area removed from production. Recently, the Commission has been revising tenures and replacing area rights with volume rights. It reports that this has helped to avoid or resolve the problems associated with withdrawals since wood supplies can be rescheduled.

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73 *Forestry Act, 1916*, S.N.S.W. 1916, as amended.

Where the various statutes are silent on compensation, that does not necessarily mean that there is no legal right to compensation. Again, every state has expropriation legislation.[74] In the case of both timber and mineral interests it would be an issue in each case whether the governmental action amounted to a taking, and whether the interest qualified as an interest in "land" for the purpose of the legislation. Sometimes (as mentioned above) the legislation will state that it has no application to resource interests. However, where the statute is silent its application will be a matter of interpretation. As a general matter, the definitions of land in these statutes are broad, though the issue has not been litigated.

NEW ZEALAND

Minerals

Minerals are owned by the Crown and regulated under the new *Crown Minerals Act, 1991*.[75] Under this legislation there are three kinds of mineral permits: prospecting permits (2 years), exploration permits (5 years) and mining permits (40 years). They are all exclusive in terms of area and type of mineral, though they are expressly stated to be neither real nor personal property (section 92). Before 1981 the right to move up from one tenure to the next was automatic. Now the applicant must satisfy the Minister that the results of prospecting activities justify exploration (to move up to an exploration permit) and that the results of exploration justify mining (to move up to a mining permit). The discretion to refuse is strong and if a mining permit is denied after exploration is carried out no compensation is payable. Nor is there any automatic right to renewal of a permit, though in the case of an exploration permit an extension to ten years can be granted in certain situations (section 37).

Permits do not give the holder a right of access to private or Crown land except to carry out "minimum impact activities."[76] Special restrictions also apply to Maori lands and lands covered by conservation statutes. Access for activities beyond minimum impact is granted through "access arrangements." In respect of Crown land, the Minister must take into account the objectives of the Act under which the land is held and potential adverse effects (s. 61). Crown land may be withdrawn entirely from access,

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74 *Land and Environment Court Act, 1979*, N.S.W. 1979, No. 204 (more recently, New South Wales has passed a *Just Terms Acquisition Act* and there is ongoing debate concerning the application of this statute to logging licences); *Land Acquisition Act*, S.A.S. 1969, No. 93; *Land Acquisition Act, 1967*, Q.S. 1967, No. 48; *Public Authorities Land Acquisition Act, 1949*, T.S. 1949, No. 22.

75 N.Z.S., Act No. 70 of 1991.

76 Sections 47 *et seq.* Minimum impact activities include surveying and hand sampling, but do not include the cutting of vegetation, use of explosives, etc.

though prior rights of access are grandfathered (s. 62). Access arrangements give the holder no interest in land (s. 93).

The *Crown Minerals Act* says nothing about compensation in respect of cancellations and withdrawals. The issue is unlikely to arise very often. There are two reasons for this. First, the relatively short duration of most tenures means that land-use conflicts may be resolved by simply allowing the permit to expire. Second, because there is a large measure of discretion involved in granting a permit, land-use conflicts will, on occasion, simply be resolved by refusals. Nevertheless, in clear expropriation cases, compensation may be forthcoming. For example, according to the *Public Works Act, 1981*[77] when private land is expropriated, and there are separate licences, permits, rights or authorities over that land, they may also be expropriated. Notwithstanding that mineral permits are not interests in land, they would be compensable under this statute as though they were. The Act does not, however, apply to withdrawals of Crown land.

The *Crown Minerals Act* deals only with the allocation of rights. The new *Resource Management Act, 1991*[78] regulates the exercise of rights (though existing rights are grandfathered by section 107 of the *Crown Minerals Act*). This legislation provides for environmental impact assessment and consent procedures for resource development. Section 85 of this Act states that planning controls on land shall not be deemed to be takings. But where a plan renders land unusable or places an unfair burden, the landowner may apply to the Planning Tribunal for a modification.

After a mineral permit is granted, the process created by the *Resource Management Act* (which deals with impacts) is initiated. Two further steps must be taken before rights under the permit can be exercised. First, the permit holder must obtain access permission from the landowner. In the case of state owned land, permission must be sought from the Minster of Conservation. Next, permission must be sought from the local or regional council. If a mining company with a mineral permit is denied permission, no compensation is payable.

Inquiries to authorities and a brief search of the caselaw located no litigation resulting in compensation for a taking of resource interests. The Department of Conservation (and other sources consulted) states that problems concerning the taking back of mineral permits have not occurred (though the Department also speculated that in a clear takings case compensation would probably be paid). There is at present an ongoing dispute concerning iron sands mining leases near Auckland. An operating mine, affected by a land claim, is demanding compensation for loss of the right to mine. Two alternatives are being contemplated, including full payment for loss of the mining right,

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77 N.Z.S., Act No. 35 of 1981, s. 35.

78 N.Z.S., Act No. 69 of 1991.

including lost profits, or the cost of buying the resources from another source (the company operates a steel mill and uses the mine to supply its operation).

It may be that land-use conflicts are resolved by allowing permits to expire, or simply by refusing to grant the necessary discretionary permissions. In 1987 there were two cases concerning the revocation of mining consents for environmental reasons. The consents had been granted under the old mining legislation (requiring ministerial consent for mining on public lands).[79] They were both subsequently withdrawn for conservation reasons and the withdrawals were challenged by the holder. The cases reached opposite conclusions, but in neither was compensation awarded to the holder.[80] The new legislation expressly requires the Minister to consider the objectives of the act under which the Crown land is held (e.g., conservation and parks) and whether there are safeguards against the potential adverse effects of mining.

Forests

There are two kinds of forests in New Zealand: indigenous and exotic.[81] Most of the forests are exotic forests (imported species on plantations). Details regarding takings and compensation policy were available only in respect of indigenous forests (which, over time have dramatically diminished and been displaced by plantations). Two thirds of New Zealand's indigenous forest has been cleared. Most of the remaining forest is Crown land (4.9 million hectares). About 1.3 million hectares is either privately owned or Maori freehold. Over the past decade there have been numerous initiatives to reduce logging on both public and private land.

First, most Crown land has been withdrawn from logging, only 3 percent remains available for timber production. Second, a trust fund has been created to limit logging on private land (through restrictive covenants and outright purchase). Over the past four years 59,000 acres of forest have been protected at a cost of $9.4 million. Third, in 1990 the Minister of Customs banned the export of indigenous timber. Finally, and most

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79 *Mining Act*, 1971, s. 26(5).

80 In *Blackadder v. Minister of Forests* [summarized in (1988) 14 New Zealand Recent Law 399] the court held that the Minister had the right to revoke the consent for conservation purposes. In *Spectrum Resources Ltd. v. Minister of Conservation* (1989), 3 N.Z.L.R. 351 (H.C.) the court ordered the Minister to reconsider the revocation on the grounds that the decision to revoke had been based entirely upon the Conservation Act and had not taken into account the purposes of the Mining Act. See also *Tasman Gold Developments Ltd. v. Minister of Energy* (1985), 5 N.Z.A.R. 129, authorizing revocation of consent.

81 *Forests Act, 1949*, N.Z.S. Act no. 10 of 1949, as am. Until 1986, the New Zealand *Forests Act* set out a familiar regime of licences and leases over state owned forests. However, in that year, these provisions were entirely repealed by the *State-Owned Enterprises Act*, N.Z.S., Act No. 124 of 1986.

significantly, a new bill has been introduced to amend the *Forests Act*.[82] This law will provide strict controls over cutting in indigenous forests. Existing sawmills must register under the Act, must develop sustainable management plans that limit harvesting to levels which continue a "non-diminishing yield in perpetuity." At least 20% of the forest area is required to be withdrawn from any logging. Management plans run with the land and bind all future owners.

These initiatives have raised the takings and compensation issue. First, the export controls created substantial economic hardship in small communities. Funds were set aside for adjustment assistance to those who had sustained a direct economic loss (those who had been directly involved in the forest industry). Compensation was based on lost income for workers and lost profit for land owners, for a period of two years. Of 400 claims received, 140 were accepted as eligible (about half from workers and half from land owners). The total sum spent to date is $25 million. No further claims were to be paid after July, 1992. The amendments to the *Forests Act* will also cause economic loss. The bill, however, excludes entirely any liability for losses caused by the new controls.

As in the case of mining, forestry will also be affected by the new regime instituted by the *Resource Management Act*. In addition to the requirement of consents there are controls over water, soil, flora and fauna. The interface between these planning controls and timber rights is currently being worked out.

In New Zealand, valuators distinguish between the reduction in the value of the rights (to mine or log) to the holder and the reduction in the value of the business. The former has value only if the royalty paid to the government is less than a market royalty and the value is the advantage of the low royalty capitalized over the remaining life of the resource.

UNITED STATES

Takings on Public Lands

Determining when a taking of a private interest on public lands occurs in the United States is no easier than in Canada. As in Canada, of course, there must be a protectible property interest. The determination of this is extraordinarily complex. A leading authority[83] on the matter lists no less than a half dozen categories of interests

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82 *Forests Amendment Bill*, No. 172 of 1992 (Crown lands managed by Timberlands are excluded).

83 Jan Laitos and Richard Westfall, "Government Interference with Private Interests in Public Resources" *Harvard Environmental Law Review* vol. 11 (1987) 1.

including: vested rights, non-vested protectible property rights, protected possessory interests, non-discretionary entitlements, rights of possession and applications.

Then it must be determined that the government interference is in fact a taking. Straightforward withdrawals and cancellations are takings. But other regulatory restrictions are more problematic. Examples of such restrictions include those contained in the *Federal Land Policy and Management Act* of 1976,[84] the *Surface Mining Control and Reclamation Act*,[85] the *Endangered Species Act*, and the *National Parks Act*. These have all given rise to takings challenges.[86]

Frequently, in order to avoid the takings issue, Congress will withdraw land "subject to valid existing rights." This exempts existing natural resource interests. For example, in 1977 the *Surface Mining Control and Reclamation Act* prohibited surface coal mining on certain lands. Valid existing rights were exempted where the owner of the property could prove the acquisition of property rights that would allow coal mining and that all necessary permits had been acquired.[87] While avoiding some disputes, this approach has, of course, given rise to new litigation when there is uncertainty about the validity of asserted rights.

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84 Pub. L. No. 94-579, 90 Stat. 2743 (1976), codified as amended 43 U.S.C. 1701 (1982 & Supp III 1985).

85 Pub. L. No. 95-87, 91 Stat. 445 (1977) codified as amended at 30 U.S.C. 1201 (1982 & Supp 3 1985).

86 See, for example, *Skaw v. United States* 740 F. 2d 932 (1984): prohibition of placer mining (under *National Parks and Recreation Act*) in wild river areas amounts to a taking. However, in later proceedings it was held that the unproven claims were not valid and therefore compensation was not required. In *Whitney Benefits Inc. v. U.S.* 926 F. 2d 1175 (1991) it was held that the *Surface Mining Control and Reclamation Act* effected a taking: "The evidence having shown the total destruction of all economically viable use, the conclusion is inescapable that SMCRA constituted a taking of the Whitney Coal property. That the government may certainly do, but when it does so in the circumstances of this case, it is required by the constitution to pay just compensation." In *Yuba Goldfields Inc. v. U.S.* 723 F. 2d 884 it was held that a six year prohibition on mining on public lands could amount to a taking. In *Freese v. United States* 639 F. 2d 754 (Cl. Ct. 1981) the Sawtooth National Recreation area was withdrawn from mining (though valid existing rights were grandfathered). The withdrawal legislation also provided that no further mining patents would be issued. The plaintiff held an unpatented claim and sued on the basis that the prohibition on patenting was a taking. The court denied the claim on the basis that there was no vested right to obtain a patented claim, and the plaintiff had not lost his unpatented claim. "At best, plaintiff has suffered a denial of the opportunity to obtain greater property than that which he owned upon the effective date of the Sawtooth Act. This cannot fairly be deemed the divestment of a property interest, save by the most overt bootstrapping." (p. 758) *United States v. Locke* 471 U.S. 84 (1985) upheld new condition imposed by *FLPMA* that unpatented mining claim holders must comply with new annual filing requirement or forfeit claims.

87 M. Jamison, "Regulation and Land Withdrawals: Defining "Valid Existing Rights," *Journal of Energy Law and Policy*, Vol. 3 (1987-88), 517.

Minerals

Valid mining claims are an interest in property, and when cancellations or withdrawals occur, compensation is required, based on fair market value. However, unpatented mining claims on Federally owned lands are not valid unless there is shown to be a "discovery of valuable minerals." For example, in 1984, all national forest wilderness areas in the United States were withdrawn from mineral location. Claim holders who were unable to prove the discovery of valuable minerals (prior to the date of withdrawal) would receive no compensation.

There is much debate about the precise nature of the discovery test, but the classic statement is: "where minerals have been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success, in developing a valuable mine..."[88] This has been supplemented by the "marketability test" which requires the holder to show that the mineral can be extracted and marketed at a profit.[89]

The practical effect of the discovery requirement is that if the holder is unable to prove a valuable deposit, government may withdraw the claim area from mineral exploration with no obligation to provide compensation.[90] There is considerable debate in the United States about whether the holder of a claim should be allowed to do post-withdrawal work in order to prove his discovery. Legally, the position is not clear, though the Department of the Interior's current policy is to allow some work, though only to "confirm" a previous discovery. The distinction between "discovering" a deposit and "confirming" that discovery is somewhat ambiguous and is creating problems.[91]

What must the claim holder do to establish a discovery? First, there must be proof of mineralization and the mineral must be exposed. As one commentator said, "No matter how favorable the geologic indications or how strong the belief of the claimholder, there is no discovery if there has been no exposure of minerals on the

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88 *Castle v. Womble*, 19 L.D. 455, 457 (1894).

89 See C. A. Jeannes, "Patenting Mining Claims: Current Risks and Benefits," 36 *Rocky Mountain Mineral Law Institute*, 12-1; D. Large, "Defining "Valuable" Mineral Deposits - A Continuing Legal Quagmire," *Arizona State L.J.* (1986), 453.

90 J. Barkeley and L. Albert, "A Survey of Case Law Interpreting "Valid Existing Rights" - Implications for Unpatented Mining Claims," 34 *Rocky Mountain Mineral Law Institute* (1988) 9-01.

91 P. Baldwin, Congressional Research Service, "The Meaning of "Valid Existing Rights" in the Context of Federal Mining Claims" (Library of Congress: Washington D.C., Feb. 21, 1992).

claim."[92] And there must be proof of sufficient quantity and quality of minerals to be valuable. The claim holder need not prove the exact extent of the deposit. This can be estimated from geological inference. Detailed rules have been developed setting the standard of proof in this regard. Ultimately, the discovery rule is satisfied "only if enough is known, or can be inferred, about the physical make-up of a claim to justify a decision to mine. If further exploration is necessary before such a decision can be made, then a valid mineral deposit has not been discovered."[93] As a court explained in one case:

> ...No vein or lode containing valuable mineral deposits has yet been discovered. The dykes that have been discovered through outcroppings simply constitute an indication that a vein or lode, yet unexposed, may exist at depth. A reasonable prediction that valuable mineral exists at depth will not suffice as a "discovery" where the existence of these minerals has not been physically established.
>
> No prudent man would proceed to the development of a mine on the surface showings we have here. He would drill to ascertain whether values exist at depth. If they do exist he would then proceed to development on the basis of that showing...
>
> The further exploration by drilling as recommended by Henault's expert is not then in the nature of development of a discovered lode. It is a search for values not yet discovered, the discovery of which would justify development.
>
> Henault's "prudent man," then, is not a prudent mine developer but a prudent prospector.[94]

Where the claim is patented, or the claimholder can satisfy the discovery rule, a taking is compensable.[95] The principal rule of valuation in takings cases is market value: "full equivalent in money for the property taken so that as the end result the owner will be left in the same pecuniary position as, but no better than, he was in before the

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92 See, K. Toffenetti, "Valid Mining Rights and Wilderness Areas," *Land and Water Law Review*, Vol. 20 (1985), 31, pp. 48-9.

93 Toffenetti (1985), p. 51.

94 *Henault Mining Company v. Tysk*, 419 F 2d 766, 768-9 (1969), cert denied, 398 U.S. 950.

95 Jan Laitos and Richard Westfall, "Government Interference with Private Interests in Public Resources," *Harvard Environmental Law Review* vol. 11 (1987) 1, pp. 15-16. *Skaw v. U.S.* (1984) 740 F. 2d 932, pp. 935-6.

taking."[96] Either comparable sales, or discounted cash flow methodologies may be utilized.[97]

In the United States, the historical cost method of valuation is sometimes used in the case of exploration properties and unproven claims (for commercial valuations). The method relies on the 'exploration budget method' which essentially asks how much a prudent investor would budget for exploration. Reasonable past expenditures are used as the basis, though expenditures that have not produced positive results are excluded. Expenditures that have produced positive results are then brought forward using the consumer price index.[98]

In 1976 Congress sought to clarify the status of old mineral claims on federal public lands, passing a statute that required holders to re-register their claims. If the claims were not re-registered they were forfeited. This law survived a constitutional challenge from owners who had failed to re-register their claims. The interests on public lands were said to be subject to continuing regulatory authority and the requirement was not unreasonable. Similar laws at the state level have been upheld.[99]

Forests

Timber on federal public lands is disposed of through short-term timber sale contracts (usually of less than ten years) which give the contractor the right to cut and remove the timber. The contracts are awarded through competitive bidding and the contract purchaser is obligated to remove the trees. With the exception of Alaska, which is discussed later, this regime generally covers all national and state forests.

Timber contracts do not create a property right in the timber, and as a general matter, may be cancelled by Congress or by an executive agency. In the case of executive agencies, cancellation is usually only authorized by a term of the contract, though Congress may cancel without prior authorization.

Whether cancellation of a contract gives rise to a right of compensation, and the determination of the amount of compensation, is a matter of some controversy. If the

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96 *U.S. v. Silver Queen Mining Co.* 285 F 2d 506 (1960).

97 *United States v. 22.80 Acres of Land* 839 F. 2d 1362 (1988).

98 T.A. Loucks, "The Valuation of Hard Rock Mineral Properties," 36 *Rocky Mountain Mineral Law Institute*, 11-1.

99 See J. Laitos and D. Zillerman, "Protection from Government Action Affecting Private Property Rights in Natural Resources in the United States," *J. Energy and Natural Resources Law* (1987 Supp.) 59, 72.

cancellation is arbitrary and not for a public purpose, it will be a breach of contract. However, a termination may be the result of a "sovereign act" in which case there is no liability for breach of contract.[100] The sovereign act doctrine turns on whether the governmental action was in the public interest and had "public and general application." A recent case has held that conservation of natural resources is such an act and does justify cancellation of timber contracts (though the cancelling legislation provided a right to compensation).[101] The sovereign act rule does not mean that there is no right to compensation for cancellation. While not amounting to a breach of contract, the act may nevertheless amount to a taking and thus require compensation (a contract is "property" for the purposes of the fifth amendment). Alternatively, the cancellation may expressly provide for compensation.

Government contracts generally expressly provide for cancellation, and compensation. In other areas of government contracting in the United States, contracts will often contain a termination-for-convenience-clause. This clause may be very general, providing virtually for termination at will.[102] The clause may provide the measure of compensation. One formula specified is "the cost of performance plus a reasonable profit on those costs, whether or not benefit accrued to the government."[103]

Similarly, timber contracts frequently provide for cancellation in certain circumstances with, or sometimes without, compensation. Generally, Forest Service Regulations provide for cancellation in order to prevent environmental damage or where a land management plan has changed. Where cancelled, the regulations generally require "reasonable compensation." This is usually understood to mean unrecovered costs and "the difference between the current contract value and the average value of comparable National Forest timber sold during the preceding six month period."[104]

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100 The idea is that where state action frustrates a contract between private citizens, the party hurt has no claim against the other. Similarly, "the Government in its contracting role, like its counterpart, should not incur liability for its act done in the governing role." See *O'Neill v. United States*, 231 Ct. Cl. 823, 826 (1982).

101 *Hedstrom Lumber Co. v. U.S.* 7 Cl. Ct. 16 (1984).

102 *John Reiner v. United States* 325 F. 2d 438 (1963), at p. 442.

103 *U.S. v. Amdahl Corp.* 786 F 2d 387 (1986), at p. 394.

104 36 CFR CH 11 SS223.40: contracts may be cancelled "in order to prevent serious environmental damage or when they are significantly inconsistent with land management plans adopted or revised in accordance with section 6 of the *Forest and Rangeland Renewable Resources Planning Act of 1974*. Such provision shall provide for reasonable compensation to the purchaser for unrecovered costs incurred under the contract and for the difference between the current contract value and the average value of comparable National Forest timber sold during the preceding six month period."

Compensation for contracts cancelled because of the listing of the spotted owl as a threatened species was calculated on the basis of this formula. The office responsible for providing legal advice to the Forest Service described this as "cover damages:" the additional amount that would be required to purchase the timber elsewhere.

If cancellation of a timber contract is considered to be a taking, there is some judicial guidance now available regarding the compensation formula. The leading American case is *Hedstrom Lumber Co. v. U.S.*[105] Here the government cancelled a timber sale contract because the area covered was designated as a wilderness area. The court held that the cancellation for environmental purposes was valid as a sovereign act and did not, therefore, constitute a breach of contract. However, the legislation that cancelled the contract did provide for "just compensation" consistent with the Fifth Amendment. The company had claimed compensation based on capitalized earnings, but this was rejected by the court. Instead, the company was entitled only to the additional costs incurred by reason of the termination. This included unamortized expenses (the company had done road construction but had not commenced harvesting) and the cost of procuring replacement timber. This latter amount was essentially the difference between stumpage rates under the contract and rates during the period in which the timber would have been purchased.[106]

The Spotted Owl

Under the National Forest Management Act regulations fish and wildlife must be managed to maintain viable populations of vertebrate species. The northern spotted owl is an indicator species and in June 1990 was listed as a threatened species under the *Endangered Species Act*. The Forest Service did not comply with a requirement that it adopt a management plan to protect the owl. In *Seattle Audubon Society v. Evans*[107] the Forest Service was enjoined to comply with the *NFMA* and submit standards and guidelines to protect the owl. It was also enjoined from awarding any timber sales that would log owl habitat until the guidelines were in place.

The impact of the listing of the spotted owl on existing contracts was "negligible" according to the Director of Timber Sales. There were some mutual cancellations and they are currently working on some unilateral cancellations which can be done only by

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105 7 Cl. Ct. 16 (1984). Discussed in Jim Grode, "The Tongass Timber Reform Act: A Step Towards Rational Management of the Forest," *University of Colorado Law Review*, vol. 62 (1991), 873.

106 One commentator has described the limits of this compensation: "...the sovereign must pay only for what it takes, not for the contract holder's lost opportunities... A court is not to consider lost profit, consequential damages, or any special factor unique to the contract." *Ibid.*, 894.

107 952 F.2d 297 (9th Cir,. 1991).

the Chief Forester. However, since the spotted owl controversy, the Forest Service in the region will not sell any timber unless the purchaser agrees that the old compensation formula not be included in the contract. With the risk of litigation the Service takes the position that withdrawals and cancellations should be a shared liability. Compensation is now paid for out of pocket expenses and for the reasonable costs of holding the contract. This is considered by the National Forest Service to be legally sufficient for compensation.

Other Examples

In the United States, cancellation of grazing leases are compensated on a cost basis only. The *Land Policy and Management Act*[108] provides that compensation shall be for the adjusted value of the holder's "interest in authorized permanent improvements placed or constructed by the permittee or lessee on lands covered by such permit or lease, but not to exceed the fair market value of the terminated portion of the permittee's or lessee's interest therein."

In respect of leases and permits on the continental shelf, cancellation is compensated at the lesser of the market value of the lease, taking into account all costs of production including the costs of complying with all regulations, or cost. Cost is defined as the

> "excess, if any, over the lessee's revenues from the lease (plus interest...) of all consideration paid for the lease and all direct expenditures made by the lessee after the date of issuance of such lease and in connection with exploration or development, or both, pursuant to the lease (plus interest on such consideration and such expenditures from date of payment to date of reimbursement)...[109]

In a recent review of the treatment of oil and gas leases, two authors have suggested that the protection of mineral rights may be eroding.[110] In the case of oil and gas leases, the authors explain that courts have held that the lease confers an exclusive right only to seek permission to produce and the rights may be modified or abrogated for environmental reasons, without compensation. The authors are less certain about the erosion of rights in respect of hard rock mineral location, though they suggest that the

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108 USC 43, 1752(g).

109 *Outer Continental Shelf Lands Act*, amendment in P.L. 92 Stat. 630, at 636.

110 See George Coggins and Jane Van Dyke, "NEPA and Private Rights in Public Mineral Resources: The Fee Complex Relative?" *Environmental Law* vol. 20 (1990), 649.

trend there is the same. If so, they conclude, then property rights in mining claims on public lands are "less than absolute."

The authors conclude that the relaxation of property rights signalled by these developments, may in fact save the mining regime from more fundamental challenge. They also argue that these developments will not have serious adverse effects:

> The developments that are downgrading the federal oil and gas lease from a protected property right to an exclusive procedural licence are not as dangerous, radical, or earthshaking as the BLM contends. The federal oil and gas lease is, after all, merely a contractual transaction, and any lease purchaser can only expect to receive whatever the terms of the contract provide... Public as well as private mineral lessors or grantors can decide to convey only the rights and interests they want to convey, retaining the rest. The prospective lessee's remedies are simply to bid less or refuse to deal on those terms. Certainly, risk and speculation always have been the hallmarks of oil and gas operations in this country; this additional element of risk probably will be only a relatively minor factor in the overall leasing equation.[111]

Alaska

Forestry tenures are slightly different in Alaska where there are two large, long term contracts awarded in order to attract investment. These contracts, covering a large area of the Tongass Forest, more closely parallel the longer tenures in British Columbia. The Tongass National Forest, with over 16 million acres of land, is the United States' largest forest reserve. These agreements, which required the construction of pulp mills, cover two thirds of the forest area and entitle the holders to purchase large amounts of timber.

The House of Representatives has voted to cancel these contracts on two occasions. The Senate, however, voted against cancellation. Compensation was discussed but was not the deciding factor. There is debate whether compensation would be payable.[112] If payable, the basis for compensation would likely be the difference between the contract price and what the purchaser would have to pay if buying timber on the North Pacific market.

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111 *Ibid.*, 669-70.

112 Congressional Research Service, "Proposed Statutory Termination of Long-Term Timber Sale Contracts in the Tongass National Forest," (Library of Congress: Washington D.C., 1987).

The Attorney General's office is involved in the formulation of compensation policy with respect to a number of other disputes. Designation of certain areas for Habitat Protection eliminates mining and timber tenures and likely requires compensation (possibly even for unproven mining claims). Regulations creating buffer zones are contentious. These are being challenged by forest companies as constituting takings.

ENGLAND

Minerals

In England mining exploration and development are carried out under leases. Leases may be cancelled for breach, or for a public purpose. Where cancelled for a public purpose, compensation is paid. Mineral rights are also subject to regulation under the *Town and Country Planing Act* which governs development and use. Part IV of the Act sets out the compensation provisions. Pursuant to section 121(2), for example, compensation is excluded entirely for the imposition of adverse conditions in a planning permission to win and work minerals. Thus, mineral rights may be modified and restricted without compensation. However, as in Canada, where the restriction amounts to a taking, compensation is paid.

The major "takings" issues in England have concerned coal and petroleum. When coal was nationalized, compensation was paid to owners through the Coal Commission which acquired the fee simple interest in unworked coal. But when petroleum was vested in the Crown, no compensation was paid to landowners. Parliament stated that "one did not require compensation for the loss of something one never knew one had."[113] Petroleum licences are granted by the Board of Trade. In 1975, partly in response to the world oil crisis, England passed legislation that substantially altered petroleum licences in favour of the state, and included new taxes. This legislation, which was arguably "retroactive" and a partial taking, was never challenged in the courts.[114]

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113 R. Bentham, "The Acquisition of Natural Resource Interests by the State in the United Kingdom and in International Law," *Journal of Energy and Natural Resources Law* (1987 Supp.) 49, 52.

114 Described in Bentham (1987).

NORWAY

Several major disputes have dominated Norwegian jurisprudence on natural resource takings.[115] While the owner of land has water rights, government required that the owner obtain a licence prior to the production of hydroelectricity. A term in those licences included the provision that, after a period of years (60-80) the government could take over the facility with no compensation. The same is true of oil and gas exploitation platforms (after a period of 30 years). Notwithstanding the protection of property in the Norwegian constitution, these terms have been upheld by the courts.

By way of contrast, more recent disputes concern the retroactive alteration of terms and conditions in petroleum licences, and, in particular, the imposition of increased royalties and taxes. In 1987, some of these changes were struck down on technical and interpretive grounds. As of that time it remained unclear whether such changes, if properly done, would be unconstitutional.

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115 Arvid Frihagan, "Acquisition of Natural Resource Interests by the State," *Journal of Energy and Natural Resources Law* (1987 Supp.) 97; and Ola Mestad, "Acquisition of Natural Resource Interests by the States: The Ekofisk Royalty Case," *Journal of Energy and Natural Resources Law* (1987 Supp.) 82.

APPENDIX A-2

Forest Tenures:
Incremental Values

APPENDIX A-2

FOREST TENURES: INCREMENTAL VALUES

THE VALUE OF FOREST TENURES

The British Columbia Forest Industry Task Force on Resources Compensation (Task Force) states in its submission to the Commission that tenure rights have value in three situations.[1]

The first situation is when resource rents attributable to the timber are captured by the tenure holder and not by the Crown. Such a situation would exist if stumpages, royalties and other charges did not capture the full value of standing timber.

The second situation is when licensees pay for what has been called incremental quota. This argument mirrors an analysis which was put forth by F.L.C. Reed and H.M. Saunders in their critical review of a study done by CWC Canadian Western Capital Ltd. for the Forest Resources Commission.[2] The purpose of the Reed and Saunders' study was to refute the CWC conclusion that observed market values for timber harvesting rights on Crown lands was evidence that stumpages were not capturing resource rents. Reed and Saunders argued that market prices for harvesting rights could be explained by adopting a marginal or incremental perspective. Mills with high fixed costs, running at less than full capacity, compare marginal cost with marginal revenue when considering the acquisition of small amounts of quota (i.e., harvesting rights). In the process they ignore fixed costs (e.g., the cost of the mill) because that investment has been made and cannot be reversed. In business terms, the quota has value because it allows the mill to spread overheads over a greater output. Symmetrically, when purchasing quota for a greenfields mill an investor would have to consider full costs of production and would be unwilling and unable to pay as much for quota.[3]

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1 British Columbia Forest Industry Task Force on Resources Compensation, "A Submission to the Resources Compensation Commission," June 1992, pp. 25-27.

2 F.L.C. Reed and H.M. Saunders, "Review of Section VII of CWC Report," prepared for the British Columbia Ministry of Forests, August 1991.

3 This phenomena has been empirically documented in the dairy industry. Marketing boards set farm gate milk prices above the cost of production and allocate rights to produce milk (quota) to farmers. Small quantities of quota are privately sold for higher prices than whole farm quotas. This is because established dairy farmers have already made the investment in fixed assets such as barns, milking parlours, land and equipment. When purchasing additional quota they compare the price of milk with the incremental cost of production (i.e., cows, feed, labour) and ignore the costs of their fixed assets. A farmer entering the industry *de novo* must consider all costs and therefore is unable and unwilling to pay as much for quota as an established farmer with under-utilized fixed assets.

The third situation is when the quota buyer is paying for supply security. The argument is that lenders will offer lower financing charges to mills with secure sources of fibre because this in turn lowers the risk of default on the loan.

The Commission views each of these explanations for observed market values for harvesting rights as credible. The issue is whether market value derived from all of these sources is compensable in the event of a taking. The Commission's position is that the source of value is relevant to the compensation decision. This is explained in greater detail in Part Six of the report. In summary, if quota value represents the capitalized value of resource rents not captured by the Crown, then this value is not compensable. The Task Force argues that stumpages capture all resource rents on stumpage bearing lands, hence this cannot be the general explanation for quota value. The supply security argument is weak because any financial benefit to the mill from a guaranteed supply is attributable to the provider of that security, that is, the Crown.[4] This leaves the incremental supply argument.

The analysis that follows sets out formally the incremental supply argument and shows that market value based upon this source is identical to the cost penalties imposed upon an existing mill in the event of a supply reduction.

Increases and Decreases in Incremental Supply

1. Scenario One (Figure 1) Rents captured by stumpages

Assumptions: Marginal cost *(MC)* = *AJL* This implies the capacity limit is quantity *(Q)* = *0K*, at that point *MC* is vertical. Price *(P)* is competitively determined and, *P* = *0B*. There are fixed costs, so this is the short run. Average total cost *(ATC)* is the sum of marginal cost (*MC*, which is equal to average variable cost because it is constant) and average fixed cost *(AFC)*. *ATC* includes normal profits (i.e., a return to capital adequate to keep and attract capital).

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4 Normally, when one party to a transaction reduces the risk to the other party this will be reflected in the transaction price. For example, a seller that offers guaranteed supply will generally charge more than one that does not.

Now assume the firm is producing at $Q = 0G$:
Total Cost $(TC) = 0AFG + ABEF + BCDE$
Total Revenue $(TR) = 0AFG + ABEF = 0B \times 0G$
Loss = $BCDE$

If the firm were producing at $Q = 0K$
$TC = OAFG + ABEF + GFJK + FEHJ$
$TR = OAFG + ABEF + GFJK + FEHJ$

Fixed cost is a constant so: $ABEF + BCDE = ABEF + FEHJ$. Therefore, $BCDE = FEHJ$

An increase in output from $0G$ to $0K$ implies variable costs increase by $GFJK$, revenues increase by $GEHK$, hence incremental net revenues increase by $FEHJ$.

Intuitively, $BCDE$ represents fixed costs that are "migrated" to additional units of output. Average fixed costs fall by DE because the fixed cost burden ($ACDF$) is now spread over an outut rate ($0K$) that is greater than $0G$. Recall that $BCDE = FEHJ$.

Intuitively, $FEHJ$ is the increase in revenues net of variable costs resulting from an expansion of output by GK. It is the maximum amount the mill will pay for the timber required to increase production by GK. If it paid exactly this amount it would be indifferent about expanding output because its loss $(FEHJ)$ would be identical to its loss at output $0G$ (i.e., $BCDE$). This is the incremental cost argument for tenure values.

Conclusion: The value of tenure equals the "savings" in fixed costs borne by the initial output as a result of expanding output.

Symmetrically, the value of tenure reflects the cost of reducing output from the current level. Playing this sequence in reverse, and assuming the mill is operating at output $0K$, and that timber allocation is reduced such that output must be reduced by GK the mill will be indifferent over the taking if it receives compensation of $BCDE$. That is, it will just be earning normal returns on invested capital.

Ancillary conclusions:

Ceteris paribus, the greater the absolute value of the slope of the AFC, the greater will be the compensation.

Compensation should be bounded by the current cost of downsizing the mill to achieve the pre-reduction average total costs. In the diagram, if modification of the plant to operate at $0G$ (with $ATC = KH$) costs less than the discounted present value of the

Figure 1

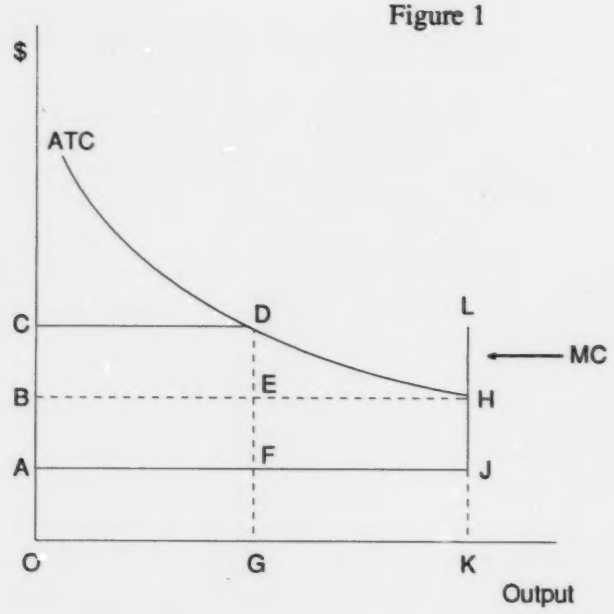
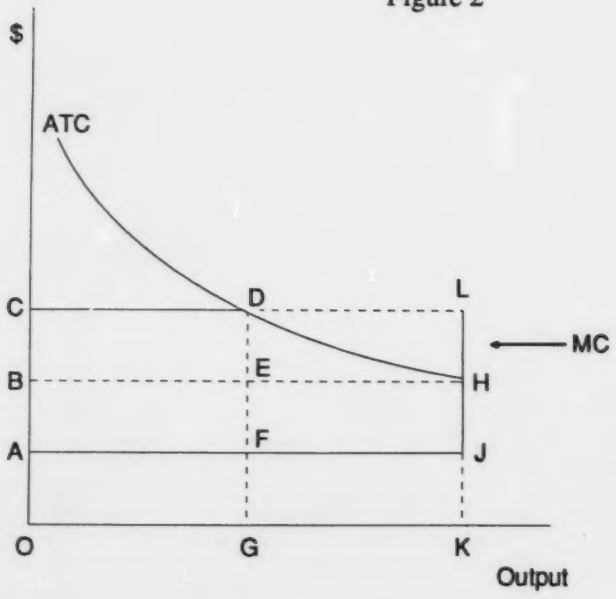


Figure 2



stream of *BCDE* over the life of the asset, then compensation should cover the modification cost and no more.

2. Scenario Two (Figure 2) Uncaptured rents

Adopt the same assumptions under scenario one, but assume market price $P = 0C$.

Assume the mill is running at *0G* and thus is breaking even (i.e., making a normal rate of return). In this case the mill would be willing to pay *FDLJ* for incremental wood. This represents net revenues (or rents) which could be earned by expanding output by *GK*.

By the same token, if at the outset the mill were running at *0K* and timber were withdrawn to the extent that output was reduced by *GK*, then rents would be reduced by *FDLJ* (which is equal to *BCDE* + *EDLH*).

In terms of compensation policy it is important to note that in this instance payment of the market value of the tenure would include a significant rent component: *EDLH*. Alternatively, per unit costs have been raised by *ED*, hence the mill could be "restored" to its original cost position by compensation of *BCDE*.

THE IMPORTANCE OF EXCESS CAPACITY

The effect of a reduction in capacity utilization will be strongly influenced by the level of output being achieved by the mill prior to the reduction. In other words, the proportion of fixed costs "migrated" to the remaining output depends on initial production. An example will help clarify this.

Assume two mills with identical characteristics. Each has fixed costs of $100 and capacity of 100 units. One, mill *A*, is being run at capacity and therefore has fixed costs per unit of $1 ($100/100 units). The other, mill *B*, suffers from excess capacity and is producing 50 units, hence fixed costs per unit are $2. Now, both *A* and *B* lose timber equivalent to 10 units of output. For mill *A*, $10 worth of fixed costs are "migrated" to the remaining 90 units of output, and fixed costs per unit become $1.11 ($100/90). For mill *B*, the loss of 10 units of output leads to a "migration" of $20 worth of fixed costs to the remaining 40 units of output, and fixed costs per unit become $2.50. The result is that for an equivalent reduction in timber it will take $10 to restore mill *A* to its original fixed cost per unit position, but $20 to restore mill *B*.

APPENDIX A-3

Mineral Property Valuation, a Bibliography

APPENDIX A-3

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APPENDIX A-4

New Brunswick Regulation 86-98, s.29

APPENDIX A-4

NEW BRUNSWICK REGULATION 86-98, S.29

29(1) A feasibility study report required under subparagraph 68(1)(c)(i) of the Act shall contain the following:

(a) a list of the names and mailing addresses of the lessee, its agents and the mine manager;

(b) a summary of the study including an assessment of the feasibility of production;

(c) a description of the geographic setting of the lease area including a map at a scale of 1:50,000 showing the boundaries of the lease area in relation to topographic features;

(d) a detailed description of the geological setting and mineralogy of the deposit to be mined;

(e) a list of the minerals or products to be mined or produced;

(f) a list of ore types and reserves thought to exist in the deposit to be mined, classified as proven, probable or possible;

(g) an up-to-date summary of total exploration and development expenses;

(h) a summary of drilling and underground development and exploration work performed with results and assays;

(i) a summary of surface work performed with results and assays;

(j) a description of bulk sampling performed with assays and comparisons of assays;

(k) a description of pilot plants and metallurgical tests performed with results;

(l) a summary of marketing studies performed;

(m) the rationale for adopting a particular mining technique;

(n) a detailed description of the proposed mining plan including mining methods, rate of production, grades, recoveries, efficiencies and mining costs;

(o) a description of the proposed infrastructure;

(p) a list of required equipment;

(q) a description of the proposed processing methods and costs, including metallurgical flow sheets and recoveries;

(r) an assessment of the feasibility of processing the ore to the prime metal or finished product stage within the Province;

(s) an assessment of land requirements;

(t) an assessment of transportation requirements, including required access roads or rights of way;

(u) an assessment of power requirements and availability;

(v) a description of the proposed townsite, including housing, where applicable;

(w) an assessment of the potential social and economic impact of the project including the type and amount of labour required during construction and operation, wages and salaries to be paid, goods and services to be provided to the mine site and townsite, where applicable, including schools and hospitals, and the development of secondary industries;

(x) a forecast of sales revenues;

(y) estimates of capital and of total operating costs;

(z) an evaluation of the project's potential to generate sufficient cash flow to meet its operating costs, tax payments and debt servicing obligations;

(aa) scheduling;

(bb) under separate cover, a program for protection, reclamation and rehabilitation of the environment in accordance with section 30; and

(cc) such other information as may be relevant to the feasibility of the project or as may be required by the Minister.

APPENDIX A-5

List of Submissions

APPENDIX A-5

LIST OF SUBMISSIONS

Ms. Patti Brown
Mr. John G. Chittick
Mr. Jack Denny
Mr. Gerhard H. Eichel
Mr. Robert C. Handfield
Mr. Gerald Harper
Mr. T.N. Macauley
Mr. R. M. MacKenzie
Mr. John Matheson
Mr. Robert McCandless
Mr. Doug McCormick
Mr. John S. Murray
Mr. Rick O'Neill
Mr. Kevin Shaw
Mr. Robert Sherwood
Mr. Garth Woodworth
Mr. Roy Woolverton

Alberta, Min. of Forestry, Lands & Wildlife
Hon. LeRoy Fjordbotten, Minister

Alberta, Mineral Rights Committee, Mineral Resources Division
Ms. Diana Purdy, Director, Geology, Planning & Compensation

Alcan Smelters and Chemicals Ltd.
Mr. W.J. Rich, Vice President, British Columbia

Appraisal Institute of Canada
Mr. Larry Dybvig, Manager, Real Estate Division

Association of B.C. Professional Foresters
Mr. W.J.B. Devitt, Executive Vice-President

B.C. & Yukon Chamber of Mines
Mr. Jack M. Patterson, Managing Director

B.C. Cattlemen's Association
Mr. L. Leach, Secretary/Manager

B. C. Environmental Network Forest Caucus
Mr. Jim Cooperman, Coordinator

B. C. Environmental Network Forest Caucus
Mr. Ray Travers, R.P.F.

B.C. Expropriation Association
Mr. Robert S. Cosburn

B.C. Fishing Resorts and Outfitters Association
Mr. J.R. McMaster, Executive Director

B.C. Forest Industry Task Force on Resources Compensation
Mr. G.M. Clark, Chairman

B.C. Hydro
Mr. K. Epp, Vice-President, Resource Management

Barrda Minerals Inc.
Mr. D.A. Barr, Geological Consultant

Better Resources Ltd.
Mr. Clifford C. Rennie, President/Chairman

Boundary Woodlot Association
Mr. F. Marshall, President

Canfor Corporation
Mr. Peter Bentley, Chairman and Chief Executive Officer

Chamber of Mines of Eastern British Columbia
Mr. David Cherry, President

Cominco Ltd.
Mr. Robert E. Hallbauer, President and Chief Executive Officer

Crestbrook Forest Industries
Mr. J. Konkin, General Manager Resource Operations

Douglas Lake Investments
Mr. C.C. Woodward

Endeavour Financial Corporation
Mr. Robert T. McKnight, Director

Falconbridge Limited
Mr. M.J. Knuckey, Senior Vice President

Federated Co-operatives Limited
Mr. C.F. McCarthy, Senior Vice-President, Forest Products

Fletcher Challenge Canada Limited
Mr. D.W.G. Whitehead, President & CEO, Canadian Operations

Foothills Woodlot Association
Mr. G. Kalischuk, Chairman

Forest Alliance of British Columbia
Mr. Jack Munro, Chairman

Fraser Institute
Mr. Michael A. Walker, Executive Director

Geddes Resources Limited
Mr. Keith L. Somerville, President

Guide Outfitters Association of B.C.
Mr. Don Caldwell, Executive Director

Iron River Resources Ltd.
Mr. Dan P. Berkshire, President

K.C. Minty & Associates Ltd.
Mr. Keith C. Minty

Kootenay Christmas Tree Association
Mr. Charlie Willis, Director

Ktunaxa/Kinbasket Tribal Council
Ms. Sophie Pierre, Administrator

Kyuquot Native Tribe
Mr. Jack Woodward, Solicitor

Lafarge Canada Inc.
Mr. H.L. Youngblood, President, Western Region

Lakeland Mills Ltd.
Mr. Keith Andersen, President

Louisiana-Pacific Canada
Mr. D.E. Swaffield, Manager, L.P. Woodlands Division

MacMillan Bloedel Limited
Mr. John L. Howard, Senior Vice-President, Law & Corporate Affairs

Manitoba, Mining Rights Committee
Sheena S. Shetty, Chief Mining Recorder

Mining Association of B.C.
Mr. T.M. Waterland, President & CEO

Mintek Resources Ltd.
Mr. Victor Jones, President

New Brunswick, Mining Rights Committee
Mr. Eugene V. Jackson, Recorder, Mineral Development Branch

Newfoundland, Department of Justice
Mr. John P. Andrews, Solicitor

Newfoundland, Mining Rights Committee
Mr. Noel Gover, Manager, Mineral Rights

Pacific Resource Education Society
Mr. Jack Cann, Spokesperson

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Mr. G. Clausen, Mine Manager

Placer Dome Inc.
Mr. A. J. Petrina, President and Chief Executive Officer

Prospectors and Developers Association of Canada
Mr. Fenton Scott, President

Quebec, Mining Rights Committee
Mr. Normand Cote, Adjoint Executif

Quebec, Mining Rights Committee
Mr. Denis Forten, Director, Mining Titles

Royal City Field Naturalists
Ms. Norma R. Boutellier, President

Ruanco Enterprises Ltd.
Mr. Gordon G. Richards

Saskatchewan, Min. of Parks & Renewable Resources
Hon. Darrel Cunningham, Minister

Saskatchewan, Min. of Parks & Renewable Resources
Mrs. Pat Youzwa, Deputy Minister

Silver Standard Resources Inc.
Mr. Robert A. Quartermain, President

Steelhead Society of B.C.
Mr. Craig Orr, President

Teck Exploration Ltd.
Mr. T.W. Spilsbury, Vice-President

Union of B.C. Municipalities
Mayor Joyce Harder, President

United Fishermen and Allied Workers' Union
Ms. Mae Burrows, Environmental Director

University of British Columbia
Dean Clark Binkley, Faculty of Forestry

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Prof. G.W. Poling, Department of Mining & Mineral Process Engineering

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Prof. Richard Poulin, Department of Mining & Mineral Process Engineering

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Mr. William J. Andrews, Executive Director

Western Canada Wilderness Committee
Mr. Paul George, Founder

Westmin Resources Limited
Mr. Bruce McKnight, Vice President, Corporate Affairs

Yukon, Mining Rights Committee
Mr. R.G. Ronaghan, Regional Manager, Mineral Rights

Hearings were arranged by request with:

B.C. & Yukon Chamber of Mines

B.C. Forest Industry Task Force on Resources Compensation

B.C. Commission on Resources and the Environment

Forest Alliance of British Columbia

IWA Canada

MacMillan Bloedel Ltd.

Mining Association of B.C.

Truck Loggers Association